MEETING ABSTRACTS

A1 Loco-regional relapses from rectal cancer
L Izzo, D Pietrasanta, S Trombetta and A Bolognese
“P. Valdoni” Surgery Department, Policlinico Umberto I University Hospital, Rome, Italy
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Background: Loco-regional relapses (LRRs) from rectal cancer still represent a major issue in colorectal surgery. With the introduction of Total Mesorectal Excision (TME), LRR incidence after curative resection for rectal cancer dramatically decreased from 20–40% of cases to 2–12%. Several factors are involved in predicting LRRs, the most important of these being Dukes stage. When no treatment is performed, median survival for these patients is about 8 months. In 50% of cases LRRs are confined to the pelvis; so, the recurrent tumour can be amenable to potentially curative surgical removal, with minimal mortality and a 5 year survival rate around 20–40%. Surgery is not recommended for patients with unresectable metastases and/or infiltration of sciatic nerve, sacrum above S2–S3, and pelvic bones.

We hereby report our personal experience with management of LRRs from rectal cancer.

Materials and methods: We retrospectively reviewed the clinical records of 289 rectal cancer patients, treated with curative resection between 1998 and 2007. Patients were divided in two groups: A (206 patients), younger than 74 y.o.; and B (83 patients), older than 75 years old. A total of 31 patients (10.7%) developed a LRR: 24 patients of group A (11.6%) and 7 of group B (8.4%). We also included in the study 11 patients (8 in group A, 3 in group B) treated elsewhere for the primary; we thus managed in total 42 LRR patients (26 males, 16 females; mean age 64 y.). LRR was anastomotic in 37.1% of cases, central-pelvic in 31.4%, presacral in 25.7% and perineal in 5.7%. In 88.5% of patients a R0 resection had been achieved at former surgery. Mean DFS was 13.4 months. We focused on the 35 patients assessed as metastases-free at the time of the first surgery.

Results: Surgical management with curative intention was possible for 23 patients (65.7%), 17 of which in group A, and consisted either of exeresis of the recurrent neoplasm (10 cases), re-resection (7 cases) or Miles operation (6 cases). In 18 of these patients (15 of group A) a R0 resection was achieved. Postoperative morbidity was 42.8%; perioperative mortality was 7.1%. 3 years – OS was 28%, but it was 60% for R0 patients.

Conclusion: In selected patients, especially if younger than 75, LRRs may be amenable to a multimodal approach that, in a relevant rate of cases, can lead to a potentially curative R0 resection; for the other cases a palliative management is possible, to improve overall survival and quality of life.

A2 Neoadjuvant chemoradiation for rectal cancer in patients aged 75 years or older
Raffaele Lombardi1, Dajana Cuicchi1, Carmine Pinto2, Francesca Di Fabio2, Bruno Iacopino2 and Bruno Cola1
1Department of General Surgery and Organ Transplantation, S. Orsola-Malpighi University Hospital, Bologna, 40138, Italy
2Department of Hematology, Oncology and Laboratory Medicine, S. Orsola-Malpighi University Hospital, Bologna, 40138, Italy
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Background: Preoperative chemoradiotherapy (CRT) has been widely adopted as the standard of care for locally advanced rectal cancer in most western countries. However there has been a general exclusion of the elderly patients from neoadjuvant trials often due to concerns over their tolerance of surgery and/or (chemo)radiotherapy. Our aim was to compare the compliance to preoperative CRT of rectal cancer patients aged ≥75 years and younger.

Materials and methods: From March 2002 to October 2008, 132 patients underwent preoperative long-course radiotherapy (5040 cGy in 28 fractions) with concurrent fluorouracil (FU)-based chemotherapy for locally advanced (T3–4 and/or N+) or metastatic (resectable synchronous liver only or lung only metastases) rectal cancer at Bologna University Hospital. Chemotherapy was delivered according to one of the following regimens: 1) continuous infusion i.v. of 5-FU alone (225 mg/m2/day); 2) continuous infusion i.v. of 5-FU (225 mg/m2/day) plus a weekly bolus of oxaliplatin 60 mg/m2 for 6 times and 3) oral capecitabine (1300 mg/m2/day). Out of 132 patients, 17 were characterised by aged 75 or older. Karnofsky performance scale ≥70, absence of significant comorbidities and comprise the elderly group. The Fisher’s exact test was used to compare proportions and the Mann-Whitney U test to compare continuous variables.

Results: Planned radiation therapy was completely delivered in 15 of 17 patients (88 percent) of the older age group and in 106 of 115 (92 percent) of the younger age group (p > 0.05). In only one patient (aged 74 years) radiotherapy was early (1800 cGy) interrupted because of bowel obstruction. The full protocol dose of chemotherapy was delivered in 10 (59%) and 94 (82%) patients of older and younger age group respectively (p = 0.0514). The main causes of chemotherapeutic schedule violation in the older...
age group were GR3/4 diarrhoea (2 patients), GR3 neutropenia (2 patients), acute neurotoxicity (1 patient), heart complication (1 patient) and Jacksonian epilepsy (1 patient). However none of these seven patients received less than eighty percent of total dose planned. All older patients underwent surgical treatment seven to eight weeks after CRT as follow: low anterior resection (10 patients), abdominoperineal resection (5 patients) and transanal excision (2 patients).

Conclusion: Our results are consistent with the concept that age should not be the only deciding factor in the treatment of advanced rectal cancer. As International Society of Geriatric Oncology recommendations, patients should receive the most intensive and appropriate treatment thought to be safe and effective according to their biological age and comorbidities.

A3
Melanoma in the elderly and sentinel lymph node biopsy: a single center experience of 124 consecutive patients
P Mainente, R Gianesini, S Faccin, S Ricciardi, E Mion, G Antonioelli and L De Santis
U.O.A. Chirurgia Generale Ospedale S. Lorenzo Valdagono – VI, Italy

Background: The best treatment for patients with pathological stage I–II malignant melanoma (sec AJCC) remains controversial because patients are unlikely to benefit from routine lymphadenectomy (over treatment risk 80%) in this stage. On the other hand, pitfalls in the identification of occult melanoma are significant (20%). Our objective was to evaluate the single center application of sentinel lymphadenectomy for the management of early stage melanoma. The sentinel lymph node biopsy (SLN) is a minimally invasive technique of staging the regional lymph nodes for melanoma that balance risks and effectiveness.

Methods: From April 2002 a total of 124 patients with mean age of 56.9 (range 21–90) years, were studied in the multidisciplinary outpatient clinic for melanoma at “Ospedale di Valdagono – ULSS 5”. We analyzed 83 patients treated from 2002 through 2008 who underwent SLN biopsy for melanoma. Candidates for SLN are patients with thick primary melanoma (>1 mm sec Breslow) or less if ulcerated or with regression. One day before surgery, lymphoscintigraphy has been performed using 99 mTc-human serum albumin. Intraoperatively, blue dye was injected around the primary site and the nodes were identified using both blue dye and hand-held gamma probe.

Results: Of the 124 patients, 44 were over 65 years old (35.4%); 27 male and 17 female with mean age of 75.3 years (66–90). Primaries were on head/neck (n = 18), trunk (n = 11), upper extremities (n = 7), lower extremities (n = 8). The most common histology was superficial spreading (18) followed by: 11 nodular melanoma, 12 melanoma on lentigo maligna, 1 acral melanoma, 2 metastases of unknown origin. The median tumour thickness was 3.56 mm (0.5–10) and 7 were melanoma ulcerated; 5 melanoma with regression. Among these patients we performed 17 SLN. Metastases in sentinel node were present in 2 cases (11.6%). A man with ulcerated melanoma of the trunk with tumor thickness >5 mm underwent axillary lymphadenectomy (25 lymph node removed, 0 metastases) and an 88 year-old female with in-transit metastases (primary knee melanoma) underwent inguinal-cruaral-otturatory lymphadenectomy (27 nodes removed, 0 metastases). Median hospital stay for the last 2 patients was 5 days and the post-operative course was uneventful.

Conclusion: SLN status is the most important prognostic factor in stage I–II malignant melanoma. Indeed, after 27 months follow-up in 612 SLN-negative patients, disease-free survival was 91%, recurrence rate was 9% and mortality rate was less than 2%. In the SLN-positive group overall survival was 77% and recurrence rate of 33% with a mortality rate of 16%. The procedure helps to identify high-risk recurrence patients, and stratify these patients into more aggressive adjuvant therapy. SLN is widely accepted even in older population however in those patients relationship between age and SLNB is not established.

A4
Octogenarians and nonagenarians with severe symptomatic and asymptomatic carotid disease: does older age indicate “high risk” for carotid endarterectomy?
Franco Mazzalai1, Oreste Terranova1, Mario Gruppo1, Giorgio Meneghetti2, Claudio Baracchini2 and Enzo Ballotta1
1Department of Surgical and Gastroenterological Sciences, University of Padua, Italy
2Department of Neurosciences, University of Padua, Italy

Background: Patients older than 80 years old were excluded from participation in the large controlled randomized trials that demonstrated the efficacy of carotid endarterectomy (CEA) in preventing stroke in selected symptomatic and asymptomatic patients. Because of limited longevity and perceived increased perioperative risk from CEA, alternative treatment options, such as carotid angioplasty and stenting (CAS) have been suggested as a lower-risk alternatives. Many of the reports evaluating CAS have thus used age older than 80 years as one of the high-risk criteria allowing entry into the studies. We analyzed 30-day stroke and death rates after CEA in patients aged 80 or more with severe symptomatic and asymptomatic carotid disease.

Patients and methods: A retrospective review was conducted on a prospectively compiled computerized database of all primary CEAs performed by a single surgeon at our institution from 1990 to 2007. Descriptive demographic data, risk factors, surgical details, perioperative strokes and deaths, and other complications were recorded.

Results: In all, 1689 CEAs were performed in 1500 patients; 171 were performed in 159 patients aged ≥80, (group I) and 1518 in 1341 patients <80 years old (group II). All CEA procedures involved either traditional CEA with patching (n = 302) or eversion CEA (n = 1387) and were performed with patients under deep general anesthesia and cerebral protection involving continuous perioperative EEG monitoring for selective shunting. No strokes or deaths occurred in the group I, whereas there were 11 perioperative strokes and 3 deaths in the group II, for a stroke and death rates of 0.7% and 0.2%, respectively.

Conclusion: The conviction that older age means higher risk needs to be revised. Patients aged ≥80 can undergo CEA with no more perioperative risks than younger patients. Age older than 80 years should no longer be used as an inclusion criterion for entry into CAS trials.
Background: Colon cancer staging and prognosis are factors related to nodal status. About 15–20% stage I or II patients develop local recurrences and distant metastases within 5 years despite surgery with curative intent. Sentinel lymph node mapping aims to facilitate staging, to identify any unusual mesenteric lymphatic drainage patterns and to select patients who might benefit from adjuvant chemotherapy.

Materials and methods: Between March and October 2008, 12 patients were enrolled in the study. All of them underwent preoperative colonoscopy. Exclusion and inclusion criteria are summarized in Table 1. One patient was excluded intraoperatively due to the discovery of synchronous colon cancer. The study was thus performed for 11 patients, 5 males and 6 females; mean age was 81 years. Lymph node mapping was performed using the in vivo technique at both open (7 patients) and laparoscopic surgery (4 patients), via a subserosal injection of Patent BlueV dye in each quadrant around the tumour. The sentinel lymph nodes are defined as the first one to four blue-stained nodes with the most direct lymph drainage from the primary tumor. The sentinel lymph nodes were examined according to standard hematoxylin-eosin staining; then they were sectioned at 200 μm intervals and examined with immunohistochemistry on cytokeratins.

Results: Detection rate was 90.9%. A mean of 2 sentinel nodes per patient was found. Mean lymph node mapping time was 15 minutes. One case of false negative was discovered. The sensitivity of the multilevel sectioning and immunohistochemistry was 75%; the negative predictive value was 95%. Neither skip metastases nor aberrant drainage were found.

Conclusion: Intraoperative sentinel lymph node mapping is a feasible technique. Cooperation between gastroenterologists, surgeons, anatomopathologists and oncologists is necessary to achieve a correct procedure. Histological upstaging is effective and reliable to define node status and consequently tumour staging and prognosis.

Table 1 (abstract A5) Criteria of the study

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<td>Rectal cancer</td>
<td>Adults</td>
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<td>Synchronous colon cancer</td>
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Differentiated thyroid carcinoma in elderly patients (over 70 years)

Background: Differentiated thyroid carcinoma (DTC) is the most common endocrine malignancy, and it usually has a favourable course, with a good prognosis, more than 90% at 10-year follow-up. Nevertheless, a subset of patients develops local recurrence or distant metastasis and may die from DTC, indicating the possibility of more aggressive variants of this carcinoma. In this study we retrospectively analyzed the incidence, the treatment and the stage of DTC in a selected group of patients aged 70 or more years old compared with a group of patients less than 70 years old.

Methods: From 1995 to 2007, 1520 patients underwent surgery for thyroid carcinoma, at our Institute. Descriptive demographic data, surgical details and stage were recorded.

Results: 1407 out of 1520 patients affected by thyroid cancer had DTC (92.5%), 97 had medullary thyroid cancer and 16 anaplastic tumor, respectively.

Regarding age, 1290 cases (1222 papillary and 68 follicular, 91.7%), were less than 70 years old (group 1) while 117 cases (107 papillary and 10 follicular, 8.3%) were aged 70 years or more (group 2).

In the younger group total thyroidectomy was performed in 1090 cases (84.5%), associated with nodal dissection (central +/- lateral compartment) in 917 (84.1%), while in the older group total thyroidectomy done in 99 (84.6%) associated with node dissection in 65 cases (65.6%). In 218 cases a partial thyroidectomy was performed (200 in group 1, 15.5% and 18 in group 2, 15.4%).

The distribution of the stage in group 1 was the following: stage I 1098 patients (85.2%), stage II 12 (1%), stage III 130 (10%) and stage IV 50 (3.8%) while in group 2 was: stage I 84 cases (71.8%), stage II 1 (0.9%), stage III 14 (11.9%) and stage IV 18 (15.4%). The overall 5- and 10-year survival rates were 71.8% and 63.9%, respectively, with an overall recurrence rate of 17.9%.

Conclusion: Our data allowed us to draw these conclusions:
1. The incidence of DTC is increased in the past three decades especially for stage IV;
2. The incidence of aggressive anaplastic cancer in group 2 is more frequent in older patients than in younger, 27.3% vs 13.8%, respectively, especially for stage IV;
3. The incidence of aggressive anaplastic cancer in group 2 is much greater than group 1, 6% vs 0.6% respectively;
Finally, very few studies had evaluated the DTC in older patients. All these patients should be considered high-risk subjects to be given the best therapeutic option, that is to say total thyroidectomy plus node dissection when necessary.

The biotechnologies in the treatment of neuro-vascular ulcers in the elder. Cultivated autografts of skin: fibroblasts and/or chératinoocytes

Objective: To verify the results obtained in 240 elderly patients, age ranged between 70 and 92 years-old (66.9% females – 31.1% males), affected with ulcers of the lower limbs, treated by cultivated autografts of skin, from April 2001 to August 2008.

Materials and methods: The biotechnologies are based on the drawing of a small fragment of skin (2–3 cm²), at the elbow. Subsequently, the skin fragment is sent to a specialized laboratory in cellular cultivated membrane, where it is divided into its two essential components: dermatocytes and chératinoocytes. These, after having been separated, centrifugated and implanted on an adapted medium which consists of modified three-dimensional jaluronic acid, develop in vitro an extended layer of tissue (dimensions 100–200 cm²), which then will be grafted separately (after 4 weeks from the biopsy) on the surface of the ulcer.

For the correct execution of such procedure are necessary four surgical steps, in sequence:
1. The debridement of the ulcer, the elasto-compressive bandage of the leg and the drawing of the skin.
2. The grafting of the layer of dermatocytes (called Hyalograft 3D) after 22–30 days.
3. The grafting of the layer of chératinoocytes (called Laserskin), after others 22–30 days.
4. The surgical treatment of the venous or arterial insufficiency after 1–10 months.

Results: We have performed a total of 520 autografts (234 dermatocytes – 286 chératinoocytes). Approximately half of the ulcers treated, were venous chronic ulcers, inveterate and painful secondary to chronic venous insufficiency of the lower limbs and/or post-thrombotic syndrome.

A clinical follow-up was performed on 186 out of the 240 cases, medially for 26 months (ranging between 3 months – 7 years and 4 months). In reference our experience, on the 240 cases treated, we have obtained 207 cases (86.25%) of complete healing, 27 cases (11.25%) of partial healing, with a reduction of the ulcerated area >50%, 6 cases (2.5%) of therapeutic failure, with a reduction of the ulcerated area <50%, 2 cases (0.83%) of amputations and 18 cases (7.5%) of relapses. The mean time for the complete closing of the ulcers has been of 13.4 weeks calculated by the date of the first graft (range 4.1–33.2 weeks).

Data on line to the more recent literature, in which is described a percentage of 95% of good clinical results (ulcers partially and completely closed) and stable in the time.

Conclusion: The advantages of this surgical method, by now universally accepted, are, therefore, of remarkable clinical and social relief and we can summarize them as follows:
1. The proved clinical effectiveness;
2. The security of the biotechnological procedure in terms of microbiological pollution of the samples;
3. The long-lasting results;
4. A positive relationship between cost and benefits.

In addition, we completely agree in asserting that such a procedure is easy and fast in execution, well-tolerated and able to replace the traditional and very more complex surgical methods.
A9
Advanced laparoscopic surgery in the elderly: experience of a single centre
S Ricciardi, R Giansini, G Antonelli, E Mion, P Mainente, S Faccin and L De Santis
U.O.A. Di Chirurgia Generale, Ospedale “San Lorenzo” Valdagnino – VI, Italy
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Objective: Elderly patients have an increased frequency of associated complex comorbidity than younger; but several well-designed trials have demonstrated the efficacy and safety of laparoscopic surgery in recent years. In fact, the experience and the progress in geriatric advanced laparoscopic surgery have increased over the past decade.
A laparoscopic approach can be used safely for miscellaneous conditions, not only for elective surgery, when adequate attention is paid to perioperative care: correction of hemodynamic instability, correction of hematocrit and coagulopathy, control of ventilator complication, early recognition of a depleted nutritional status.
The aim of this study was intended to evaluate retrospectively our experience in advanced laparoscopic approach in elderly patients.
Materials and methods: Between June 2002 and June 2008, 361 elderly patients were considered for laparoscopic surgery (61.5% were over 75 years of age). Laparoscopic colon, gastric and esophageal procedures are among the alternatives implemented for the geriatric surgery. Most patients were ASA II or upper. 266 procedures were for colorectal disease including malignant disease (174 colorectal carcinoma, 44 polyps with displasia not amenable to endoscopic removal) and benign disease (complicated diverticular disease, complicated IBD). In the colorectal group we performed: total colectomy (n = 13), right hemicolecction (n = 66), left hemicolecction (n = 101), low anterior resection (n = 65), abdomino-perineal resection (n = 11), transverse colon resection (n = 13). 75 consecutive aged patients underwent minimally invasive surgery for gastric diseases: gastric carcinoma (n = 55), GIST (n = 6), Vanek tumor (n = 1), redo gastrectomy (n = 7), giant hiatal hernia (n = 6). Gastrectomy, Bil resection, Gastroscopy, and Nissen-Rossetti fundoplication with mesh in the hiatus were the techniques required.
Laparoscopic management was feasible in 17 liver diseases (hepatocarcinoma, metastatic tumors, giant hepatic cyst and others lesions not amenable percutaneously). Enucleation and distal pancreatectomy with spleen preservation for benign lesions were performed laparoscopically in 3 elderly patients.
Results: For colorectal disease there were no intraoperative death and 1 postoperative death. Mean operative time was 170 minutes (range 138–303). The patients were discharged on day 5 to 12 (with a mean of 7 days). In 8 cases, reoperation was necessary because of postoperative obstruction in 3 cases, for anastomotic fistula in 3 cases and for bleeding in 2 cases. The rate of severe complication was 2.9% in patients <75 years old and 2.3% in those over 75 years. The conversion rate was 2.8% in <75 years and 5.7% in >75 years.
Gastric disease: there were no intraoperative death and 3 postoperative deaths. Mean operative time was 225 minutes (range 131–385). The patients were discharged on day 9 to 25 (with a mean of 10 days). In 3 cases reoperation was necessary, because of postoperative duodenal stump leak in 2 cases (1 over 75), and for bleeding in 1 case. The rate of severe complication was 3.9% in <75 and 4.3% in >75. The conversion rate was 4.8% in <75 and 6.8% in >75.
Liver disease: there were no intraoperative death and no postoperative death. Mean operative time was 164 minutes (range 97–370). The patients were discharged on day 5 to 28 (with a mean of 9 days). In 1 case reoperation was necessary, because of bleeding (over 75). The rate of severe complication was 4.9% in <75 patient and 5.1% in patients over 75. There were no conversions.
Pancreas disease: there were no intraoperative deaths and 1 postoperative death. Mean operative time was 184 minutes (range 121–323). The patients were discharged on day 5 to 18 (with a mean of 10 days). The rate of severe complication was 1.9% in patients under 75 y.o. and 3.1% in patients over 75. There were no conversions.
Conclusion: The result and the rate of complication of advanced laparoscopic surgery in elderly was comparable to open surgery, also in our experience, even if operative time was longer. Moreover, in elderly patient several benefits were reported, in term of fewer cardiopulmonary complications, less necessity of blood transfusion, reduced surgical stress, reduced post-operative immune depression, reduced length of ileus, less operative pain, rapid turn to physical activities and shortened hospital stay.
In our experience, laparoscopic surgery present also less surgical site infection and a shorter time of return to oral feeding. In our institute, however, recovery after advanced surgery was improved considerably by combining the use of laparoscopic technique with a multimodal rehabilitation protocol of pain relief, early mobilization and oral nutrition.
It is concluded that advanced laparoscopic surgery in the elderly, provided technical expertise and a long learning curve to the surgeon, a good selection of patients, a good intraoperative monitoring and a good postoperative rehabilitation, is safe, feasible and oncologically correct, producing less morbidity and mortality respect to open surgery.
A10
Laparoscopic colo-rectal surgery in octogenarians
Coletta Martina, Baldarelli Maddalena, Rimini Massimiliano, De Sanctis Angelo, Campagnacci Roberto and Guerrieri Mario
Clinica di Chirurgia Generale e Metodologia Chirurgica, Università Politecnica delle Marche – Ospedali Riuniti, 60121, Ancona, Italy
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Aim: Colo-rectal surgery is related to a certain mortality and morbidity especially in old patients. Laparoscopic approach to the elderly patients is often considered with diffidence, but it is in this field that minimvasive surgery gives best results.
Aim of this study is to analyse our experience in colo-rectal surgery in the aged and to compare the results of laparoscopic resection (LR) versus open resection (OR).
Methods: From 1 January 2003 to 30 June 2008, 128 colo-rectal operations were performed on patients 80 years old or
more, at the Department of General Surgery of University “Politecnica delle Marche”. Patients were composed of 61 (47.6%) males and 67 (52.4%) females. Mean age was 83.4 years (range 80–95). Ninety-four (73.4%) operations were carried out by laparoscopic technique versus 34 (26.6%) by laparotomic approach. Surgical operations were: 47 (36.7%) right colecotomy, 38 (29.7%) left colecotomy, 8 (6.3%) transverse resection, 3 (2.3%) sigmoid resections, 20 (15.6%) rectum resections, 10 (7.8%) abdomino-perineal rectum amputation, 1 (0.8%) total colecotomy. Indications were represented by malignant lesions in 89 patients (94.7%) of LR and by 27 cases (82.4%) of OR.

Results: Mean operative time was 2 h 35 min for LR versus 2 h 47 min for OR (ns). No intraoperative complications and no mortality were found in both groups. Three post-operative complications were reported in LR: 2 (2.1%) anastomotic fistulas and 1 (1.1%) haemorrhage, whereas 2 in OR: 1 (2.9%) anastomotic fistula, 1 (2.9%) bronchopneumonia. One (2.9%) LR patient died in 21 days of acute kidney failure and respiratory failure. Post-operative pain was minimal in LR and patients required only a mean of 2 analgesic (Ketorolac 30 mg i.m.) versus 5 of OR. Mean hospital stay was 6 days in LR and 9 days in OR.

Conclusion: Laparoscopic technique is, in our experience, a valid and safe approach also in patients 80 years old or more. Thanks to a reduced post-operative pain and an early mobilization, this method brings to a considerable reduction of post-operative complications and to a shorter hospital stay.

All
Laparoscopic cholecystectomy in the elderly
E Zappulla, V Russo, I Gullotta, G Patanè, S Trovato, B Lucifora, S Costa, A Tracia, P Caglì and C Amodeo
Department of Surgical Sciences, Organ Transplantation and Advanced Technologies, Surgery Oncology Unit, University of Catania, Italy

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Objective: The purpose of this study was to evaluate the outcome of laparoscopic cholecystectomy in patients age 70 and older with gallstone disease. We reviewed our experience with the laparoscopic procedure underlining the results of laparoscopic cholecystectomy in the geriatric population in term of mortality and complication rates.

Methods: We conducted a retrospective study evaluating the medical records of 40 consecutive patients age 70 or older who underwent laparoscopic cholecystectomy at the Department of Surgical Sciences, Organ Transplantation and Advanced Technologies, Oncology Surgery Unit, University of Catania, Italy. Data included age and gender, American Society of Anesthesiologists (ASA) score, comorbid illness, prior abdominal surgery, presentation, operative time, conversion rate and reasons for conversion, postoperative morbidity and mortality rates, pathologic diagnosis, and length of hospital stay. Patients were classified as having complicated (acute cholecystitis, biliary pancreatitis, obstructive jaundice, and cholangitis) or uncomplicated (biliary pain) gallstone disease. Ultrasonography evidence of a dilated common duct or presence of common duct stones, serum elevations in alkaline phosphatase, transaminase, or bilirubin were indications for preoperative magnetic resonance cholangiography. Preoperative endoscopic retrograde cholangiopancreateography (ERCP) with removal of possible common duct stones was performed in the patients suspected of having choledocholeithiasis.

The timing for LC in patients with acute cholecystitis was 24–72 hours from admission. Patients with acute pancreatitis related to gallstone disease underwent surgery after resolution of clinical and biochemical symptoms. The supportive treatment during the acute phase consisted of intravenous infusion, antibiotics, and nasogastric suction when necessary. Early surgery was defined as laparoscopic cholecystectomy during the initial hospitalization usually within 5 days, whereas patients undergoing delayed surgery were treated conservatively, discharged, and readmitted for elective operation. Patients were included if surgery was performed primarily for symptomatic gallstone disease and excluded if cholecystectomy was performed incidentally or secondary to another procedure. Laparoscopic cholecystectomy was performed using a standard four-trocares technique. An “open technique” was used in all cases to introduce the subumbilical cannula as previously described by our group. Dissection of the gallbladder from the liver was accomplished using monopolar electrocautery. Intraoperative cholangiography was performed selectively to assist in defining the anatomy or intraoperative abnormalities. A closed suction drainage was used in all procedures.

Results: Forty patients with a mean age of 74.2 years (range 70 to 91 years) were evaluated. 13 (32.5%) were males and 27 (67.5%) were females. All 40 patients in this series of geriatric patients were symptomatic from their gallbladder disease. A variety of the classical symptoms of gallbladder disease consisting of epigastric pain, Murphy’s sign, fatty food intolerance, nausea and emesis, right upper quadrant pain radiating to the back, biliary colic, fever, dyspepsia, belching and bloating, were present in all patients in this series. The indications for surgery included biliary colic in 26 (65%) patients, acute cholecystitis in 9 (22.5%), acute cholecystitis with pancreatitis in 5 (12.5%). The patients were evaluated according to the American Society of Anesthesiologists (ASA) classification. Twenty-two patients were classified as either class I or II, fifteen patients were classified as class III, and three were classified as class IV. Comorbid conditions included hypertension, cardiac disease, peripheral vascular disease, and diabetes mellitus. Ten patients had no comorbid disease (25%). ERCP was performed preoperatively in one patient who had common bile duct stones that required sphincterotomy and stone extraction. Operative time in this geriatric series of patients ranged from 46 minutes to 2 hours. Conversion to open cholecystectomy was required in three of 40 patients (7.5%) due to their distorted anatomy (intrahepatic gallbladder, severe acute inflammation) with inability to safely dissect the cystic duct and cystic artery or suspected cancer of the gallbladder. Postoperative complications occurred in four patients. Two of the four complications were related directly to the surgical procedure itself including one patient with a postoperative cystic duct leak, which was treated successfully with an ERCP and sphincterotomy. One patient had a postoperative bleeding from a trocar-site requiring reoperation. Medical complications that were not directly related to the procedure itself included one patient with postoperative myocardial infarction that was admitted to the cardiac intensive care unit and was discharged from the hospital after 11 days. The mean postoperative hospital stay was 3 days (range 2–11). A few patients required more than 48 hours postoperative hospitalization. The perioperative mortality rate was 0%.
Conclusion: The population of persons older than 80 years has increased by during the last century. Fifty percent of women and sixteen % of men in their 70s have been shown to have gallstone disease, and 20% of the abdominal procedures performed in those older than 80 years are hepatobiliary. Although the prevalence of gallstone formation increases with age, and many studies have examined the results of laparoscopic cholecystectomy in elderly patients, the treatment of gallstone disease in this age group is a challenging. This group of patients has in fact an incidence up to 55% of complicated gallstone disease, such as acute cholecystitis, jaundice, choledocholithiasis, cholangitis, and biliary pancreatitis. Elderly patients frequently suffer from significant comorbid diseases and limited cardiopulmonary reserves that may contribute to a complicated perioperative course and increase postoperative complications rate. Acute biliary disease in the elderly was associated with a considerable increase in operative morbidity and mortality, when compared with non-elderly patients.

Laparoscopic cholecystectomy is currently the procedure of choice for managing gallstone disease and were demonstrated the physiological benefits and positive socioeconomic effects over the open procedure. The many advantages of the laparoscopic procedure include less patient discomfort, early hospital discharge, early return to a normal lifestyle, and lower cost. Many studies have demonstrated the applicability and advantages of the laparoscopic cholecystectomy also in the geriatric population with low rates of morbidity and mortality. Despite the frequent presence of concomitant diseases involving the lung, heart, and frequent presence of diabetes, these medical diseases contributed minimally to the morbidity results for geriatric patients treated with laparoscopic cholecystectomy whereas open cholecystectomy have consistently demonstrated higher rates of morbidity and mortality and greater lengths of hospital stay than the general population.

A12 Laparoscopic adhesiylsis in the elderly patient
Micol Sole Di Patrizi, Stefano Trastulli, Claudia Conti, Ioanna Galanou, Diego Milani, Pamela Del Monaco, Carla Migliaccio, Roberto Cirocchi, Giammario Giustozzi and Francesco Sciannameo
Unit of General and Emergency Surgery, Ospedale S. Maria, Terni, University of Perugia, Terni, Italy

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Background: The aim of this work is to evaluate the reliability and the immediate results of laparoscopy versus conventional open surgery for acute small bowel obstructions by postoperative adhesions.

Materials and methods: We considered 190 patients (median age 78 years, 64–93) operated for acute small bowel obstruction by postoperative adhesions in the Unit of General and Emergency Surgery. We performed preoperative urgent blood tests and abdominal x-ray to all the patients; 163 patients were treated with traditional laparotomic access, while 27 selected patients underwent laparoscopy.

Results: For 3 (11.1%) of the 27 patients treated with laparoscopy a conversion was necessary because of the adhesions localization in the posterior abdominal wall. The median stay in hospital was 4.7 days for patients who underwent laparoscopy and 14.3 days for patients treated with traditional laparotomy. None of the first group's patients were reoperated on within 30 days of surgery, while 5 patients (3.1%) of the patients who underwent laparotomy needed to be reoperated because of obstruction recurrence by new adhesions.

Conclusion: Laparoscopic adhesiolysis is possible only after a careful selection and in these selected patients it shows more advantages than open surgery, otherwise in unselected cases it can be disadvantageous. Morbidity is low if the operation is performed by skilled. The immediate benefits are a rapid intestinal motility and a shorter stay in hospital. Long-term effect is the prevention of small bowel obstruction recurrence by postoperative adhesions.

A13 Difference of site in ulcer lesions of diabetic foot in the elderly
Andrea Bruttocao, Saverio Spichr, Carmelo Militello, Bruno Martella, Roberto Nistri, Aldo De Rossi, Franco Mazzalai, Silvia Basato, Simone Zanella and Oreste Terranova
Clinic of Geriatric Surgery, Hospital University of Padova, Italy

BMC Geriatrics 2009. 9(Suppl 1):A13

Clinical background: Skin ulcers of the foot are among the most debilitating complications in diabetic patient, especially if elderly. The main risk factors for the development of the ulcer are diabetic neuropathy (sensory, autonomic), lower limb ischemia (diabetic arteriopathy), limited mobility and altered plantar pressure.

The aim of the study was to evaluate the different site of the diabetic ulcers according to their origin.

Materials and methods: In 4 years, 302 diabetic patients were evaluated: 256 were over 65 years old (median age: 76.4 ± 5.2 years), with a comprehensive 537 ulcers in lower limbs; these lesions were divided into 3 groups by their origin: neuropathic, ischemic and neuroischemic.

Results: No differences were found in the lesions in patients younger than 65 (not statistically comparable number), while in the others (patients over 65 years old) there was a clear difference of site: in neuropathic patients the most part were found in the plantar surface of the foot (51.4%), especially in metatarsal heads area (49.1%). The ischemic group had the most frequent site in extremities of toes (66.5%), while the neuroischemic lesions were located on both plantar surfaces (51.8%).

Conclusion: The distribution of ulcers was statistically significant in all different elderly groups and seems to be correlated with their etiology (p < 0.0001).

A14 Nutritional support in elderly
Maria D’Angelo1, Raffaele Lanteri1, Laurachiara Ventura2, Marco Santangelo1, Guido Azzarello1 and Antonio Licata1
1Dipartimento di Scienze Chirurgiche, Trapianti d’Organ and Ospedale San Paolo, University of Naples Federico II, Naples, Italy
2Unit of Anaesthesia and Unit Care, University of Catania, Italy

BMC Geriatrics 2009. 9(Suppl 1):A14

Background: Several pathologies can compromise a nutritional state. The presence of complications in undernourished elderly patients shows that the reduced metabolic answer found may
affect deeply the clinical course of an illness and, in extreme conditions, the patient’s life.

As a consequence, the preservation of a physiological nutritional state affects a patient’s health and makes recovery quicker. The diagnosis and treatment of malnutrition is therefore one of the key steps in geriatric healthcare.

The access to artificial nutrition must take into account the patient’s nutritional state and the natural history of the pathology examined.

Artificial nutrition includes: enteral nutrition, and parenteral nutrition. Total parenteral nutrition aims at making up for nutritional deficiency caused by both insufficient oral nutrition due to anorexia and obstruction of the gastro-enteric tube or derived from a digestive inefficacy due to a deficiency in the digestive process of assimilation. Enteral nutrition is destined to elderly patients that can’t eat normally.

**Patients and methods:** The present study compares parenteral and enteral nutrition at the end of a meta analysis which has taken into account two clinical studies centred on a comparison between these two types of nutritional systems.

We compared one group of patients hospitalised in ICU over a period of 48 months during which nutritional support was mostly given to medical patients (42%), followed by trauma (37%) and surgical patients (18%).

In 100 patients was found that 61% have gastrointestinal complications (diarrhea was found in 14%) and broncho-aspiration in 3.4%.

In 25% of the critical patients who begin enteral nutrition, this fails, and thus they require parenteral nutrition.

The second group involves patients with pancreatitis. In this series, enteral nutrition would be preferred, since it improves the patient’s functions of immunity and may reduce infections. This study involved 263 patients. The aim was to evaluate advantages and disadvantages of the two types of nutritional system in cases of acute pancreatitis. The study took into account the risk of infectious and non-infectious complications, the necessity of surgical operation, mortality and the length of hospitalisation.

**Results:** The results obtained show that enteral nutrition is associated with a lower percentage of infections, a minor number of surgical operations and days of hospitalisation.

**Conclusion:** The two types of nutritional system made no significant difference to mortality as well as to non-infective complications of the patients examined.

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**Materials and methods:** A 73-year-old man came to our observation with pain to upper quadrants of the abdomen, fever, signs of peritoneal involvement, leucocytosis, and the increment of cholestasis markers, while US scan showed an acute cholecystitis. The patient underwent a laparoscopic cholecystectomy (LC) but we converted the procedure. We positioned a T-tube and an abdominal drainage. Post-operative bilirubin level began to increase, the abdominal drainage began to drain bile despite the patient’s conditions were good. A parenteral nutrition was instituted, deficits of electrolytes and vitamins were corrected and octreotide was delivered. We decided to position a PTHBD on the right biliary emissary and to perform ERCP to reconstruct biliary tract. Post-operative control showed a well-positioned drainage but a biliary leakage so we decided to perform a hepaticojejunostomy. During the 9th day after hepaticojejunostomy the patient developed a severe episode of hemobilia due to a big pseudoaneurysm on the right hepatic artery, which was covered by stenting. After that general conditions of the patient improved day by day and was discharged after 48 days.

**Results:** In the case above, conservative treatment had been made immediately because spontaneous closure of the fistula is often usual. Endoscopic treatment of fistula by sphincterotomy, stenting or both is indicated in most patients. Operation is indicated when non-operative measures are not suitable, such as in patients with diffuse bile peritonitis. The increased use of interventional procedures is associated with an increased incidence of vascular injuries and hemobilia. Angiography could detect significant hemobilia in over 90% of patients, and allow the localization of vascular lesions and therapeutic embolization.

**Conclusion:** Management of bile duct injuries is complex because of physiopathologic effects especially in elderly patients, which present associated co-morbidities. It’s most important to assess the adequacy of bile drainage to avoid bile collection and peritonitis. About vascular injuries, transarterial embolization has a high success rate of around 80% to 100%, and the placement of a covered stent may be a valid therapeutic alternative. According to us therapeutic interventional procedures constitute the treatment of choice for diagnosis and treatment in a single session to avoid complex surgical procedures in patients who are often haemodynamically unstable and therefore at high anesthetic and surgical risk.

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**A15**

**Biliary fistula following open cholecystectomy: report of a case and review of literature**

Vincenzo Napolitano, Alessandro Spizzirri, Lorenzo Cattorini, Eriberto Farinella, Roberto Cirocchi, Giammario Giustozzi and Francesco Sciannameo

**Clinica Chirurgica Generale e d ‘Urgenza Az. Ospedaliera “S. Maria”, Università degli Studi di Perugia, Terni, Italy**

**BMC Geriatrics 2009, 9(Suppl 1):A15**

**Background:** We report here a case of a biliary fistula in a 73-year-old man who underwent an urgent open cholecystectomy. The aim of this paper is to assess the treatment of the biliary fistulas in the elderly patients and to compare the result with the international literature.

**Materials and methods:** A 73-year-old man came to our observation with pain to upper quadrants of the abdomen, fever, signs of peritoneal involvement, leucocytosis, and the increment of cholestasis markers, while US scan showed an acute cholecystitis. The patient underwent a laparoscopic cholecystectomy (LC) but we converted the procedure. We positioned a T-tube and an abdominal drainage. Post-operative bilirubin level began to increase, the abdominal drainage began to drain bile despite the patient’s conditions were good. A parenteral nutrition was instituted, deficits of electrolytes and vitamins were corrected and octreotide was delivered. We decided to position a PTHBD on the right biliary emissary and to perform ERCP to reconstruct biliary tract. Post-operative control showed a well-positioned drainage but a biliary leakage so we decided to perform a hepaticojejunostomy. During the 9th day after hepaticojejunostomy the patient developed a severe episode of hemobilia due to a big pseudoaneurysm on the right hepatic artery, which was covered by stenting. After that general conditions of the patient improved day by day and was discharged after 48 days.

**Results:** In the case above, conservative treatment had been made immediately because spontaneous closure of the fistula is often usual. Endoscopic treatment of fistula by sphincterotomy, stenting or both is indicated in most patients. Operation is indicated when non-operative measures are not suitable, such as in patients with diffuse bile peritonitis. The increased use of interventional procedures is associated with an increased incidence of vascular injuries and hemobilia. Angiography could detect significant hemobilia in over 90% of patients, and allow the localization of vascular lesions and therapeutic embolization.

**Conclusion:** Management of bile duct injuries is complex because of physiopathologic effects especially in elderly patients, which present associated co-morbidities. It’s most important to assess the adequacy of bile drainage to avoid bile collection and peritonitis. About vascular injuries, transarterial embolization has a high success rate of around 80% to 100%, and the placement of a covered stent may be a valid therapeutic alternative. According to us therapeutic interventional procedures constitute the treatment of choice for diagnosis and treatment in a single session to avoid complex surgical procedures in patients who are often haemodynamically unstable and therefore at high anesthetic and surgical risk.
Materials and methods: From 01.01.2004 to 01.06.2008, 100 patients (average age 74.5 ± 7.3) affected by insulin dependent diabetes complicated by sepsis and abscess of the lower limb were treated in emergency surgery. 41 patients were submitted after a visit to immediate surgical drainage and toilets (group A), while 59 patients were transferred from other departments after an average stay of 6.4 ± 3.2 days during which only conservative therapy has been implemented (group B).

Results: No differences were found between the 2 groups regarding age and clinical features (general conditions, concomitant diseases etc.), except for the following differences in Group B: higher levels of glucose in the blood (P = 0.015), lower levels of albumin (P = 0.005), and more frequent extension of inflammatory processes to proximal regions of leg (P = 0.005).

The resolution was achieved in group A, without amputation in 9 patients, with amputation of 1 or more toes in 19, with metatarsal amputation in 12 and with Chopart amputation only in 1 case.

Group B: incision and drainage were sufficient only in 4 patients, amputation of 1 or more toes in 21, minor amputations (metatarsal) in 10, Chopart amputations in 20 patients and major amputations (leg) in 4 cases.

The level of amputation was significantly more proximal in group B (Chi² = 24.3 P < 0.001).

The logistic regression analysis showed a significant relationship between the level of amputation and the number of days elapsed before debridement (odds ratio, 1.61; P = 0.015; confidence interval, 1.10–2.36), but not in presence of peripheral occlusive disease (odds ratio, 1.72; P = 0.376; confidence interval, 0.28–15.2).

Conclusion: In elderly patient with diabetic, foot the function of lower limbs is significantly reduced in case of delay of surgical debridment for inflammatory process.

A17
Breast cancer in older woman: can axillary dissection be omitted?
Francesco Barberini, Antonio Rulli, Piero Covarelli, Marco Badolato, Daniele Gentile, Carlo Boselli, Fabio Rondelli, Alessandra Servoli and Giuseppe Noya
Oncologic Surgery Unit, Breast Unit University of Perugia, Italy

Introduction: Older patients with breast cancer are generally fragile and the surgical therapy must be evaluated for each singular patient because of the high mortality due to systemic diseases and the shorter expectancy of life. In the elderly, the role of axillary treatment remains controversial. In patients with early breast cancer the axillary nodes are often uninvolved on surgical dissection and this procedure is responsible for functional sequelae, mainly arm oedema.

Aim: From 1995 to 1998 the Breast Unit of University of Perugia participated to a randomized multicentric study coordinated by I.E.O (European Institute of Oncology, Milan) with the aim of assessing the role of axillary radiotherapy in reducing axillary metastases in patients with early breast cancer who did not receive axillary dissection.

Methods: From 1995 to 1998, 435 patients over 45 year old with breast cancer up to 1.2 cm and clinically uninvolved axilla were randomized in two arms: 214 to conservative surgery without axillary dissection and 221 to conservative surgery without axillary dissection plus axillary radiotherapy. Our Breast Unit participated in the study with 25 patients.

Results: After a median follow up of 63 months, 3 (1.5%) axillary metastases were found in the no treatment arm and 1 (0.5%) in the radiotherapy arm. The overall 5-year disease free survival was 96%.

Twenty-five patients of our Breast Unit during a follow up of 120 months never developed axillary metastatic disease.

Conclusion: Adjuvant therapy is usually administered considering the biological parameters of the primary carcinoma. Many patients with isolated cancer cells or micrometastases in the lymph nodes may never develop axillary metastases; thus the strategy of sparing the axillary dissection can avoid to an elderly patient many surgical complications leading to a better quality of life.

A18
Optimal treatment strategy in extremely elderly patients with hepatocellular carcinoma
A Ruzzzenente, S Pachera, C Iacono, A Valdegamberi, P Nicoli, T Campagnaro, G Piccirillo and A Guglielmi
Department of Surgery and Gastroenterology, Division of Surgery A, University of Verona Medical School, Verona, Italy

Background and objective: The hepatocellular carcinoma (HCC) is a frequent cancer worldwide. This disease is more frequent in patients over 70 years and only few papers in literature analyze the clinical characteristics and the survival of elderly patients with HCC. The aim of this study is to describe the features and the results of treatment of patients older than 80 years with HCC.

Methods: 464 patients with HCC observed from 1991 to 2007 were included into the study. All the patients were evaluated for

Figure 1 (abstract A18)
Results: Of the 464 patients included into the study 414 were 80 years. We compared the clinical and tumor stage. All the patients included into the study had no treatment of HCC in relation to the severity of liver impairment. Survival of patients with HCC after LR according to different age group, Figure 2 (abstract A18). Median survival time for all patients was 30.4 months (95% CI 24–36). Overall survival was not significantly different in the group younger or older then 80 years with an actuarial 5-year survival of 27% and 25%, respectively. Median survival time was 57 months for LR, 30 for LAT and 8 for ST, with a 5-year survival of 47%, 20% and 2.5% respectively (p = 0.001). In the LR, LAT and ST survival was not significantly different if the two group of patients, younger and older than 80 years (Figures 1, 2).

Conclusion: The present study shows that LR and LAT for patients with HCC older than 80 years can achieve good results that are comparable to younger patients. Advanced age should not be considered a contraindication for LAT or LR of HCC; optimal treatment strategy should not be guided by patients’ age but by the tumor stage and the degree of liver dysfunction.

A19
Treatment of elderly breast cancer patients in our breast unit
A Sanguinetti1, D Estevan1, R Lucchini2, F Calzolari2, M d’Ajello3, F d’Ajello2 and N Avenia1
1Struttura Dipartimentale di Senologia Azienda Ospedaliera “Santa Maria” Terni, Italy
2Struttura Complessa Di Endocrinochirurgia del Collo e dei Tessuti Molli, Azienda Ospedaliera “Santa Maria”, Terni, Italy

Hypothesis: Elderly breast cancer patients are underdiagnosed and undertreated in our Breast Unit.


Patients: A total of 87 breast cancer patients aged 70 years or older diagnosed between 2003 and 2007, treated in our Unit, was identified. The data for 3 prospectively chosen age subgroups (aged 70–74, 75–79, and 80 years) were subsequently analyzed.

Main outcome measures: Data were collected regarding the method of detection of cancer, tumor characteristics and staging, type of treatment, and patient comorbidities. Comparisons between age subgroups were made using a likelihood ratio 2 test.

Results: Forty-six percent (41) of all patients presented with palpable breast cancer. Mammography was frequently used as an adjunct to the physical examination but was helpful in detecting occult disease in only 54% (47) of all patients and 38% (33) of patients older than 80 years. Although more than 70% (61) of patients were considered stage I or II, complete pathologic staging was only performed in 64% (56) of patients. Approximately 50% (43) of patients were treated with breast-conservation surgery; however, adjuvant radiation therapy was omitted in 55% (46) of these patients. Additionally, only 29% (25) of patients with positive lymph nodes received chemotherapy, and 67% (58) patients who were estrogen receptor-positive received adjuvant hormonal therapy.

Conclusion: Older breast cancer patients are more likely to be diagnosed and staged clinically. Mammography is underused as a screening modality. While breast conservation surgery was performed in about half of the patients, adjuvant radiation, chemotherapy, and hormonal therapies were frequently excluded.

A20
Colorectal cancer surgery in the elderly: oncologic results from our experience
F Selvaggi, D Simo, C Cellini, D Iacovetta, R Dimalio, R Cotellese, A D’Aulerio, F Franchomano and P Innocenti
“G. d’Annunzio” University Chieti-Pescara, Surgical Sciences Department, Via dei Vestini 66100, Chieti, Italy

BMC Geriatrics 2009, 9(Suppl 1):A20

Aim: Colorectal cancer is a disease of elderly people, since over 70% of cases occur in patients aged 65 years or older, and is a major cause of morbidity and mortality. The purpose of this study is to evaluate the outcome of surgical treatment in this population referred to our institution.

Methods: A retrospective analysis of a geriatric population (>65 years) was proposed to review the risks and the benefits of surgery for colorectal cancer (2006–April 2008). Measures of the

BMC Geriatrics 2009, 9(Suppl 1):A20
effectiveness of surgery included overall survival and disease-free survival with emphasis to age-related risk factors.

**Results:** A total of 100 patients with the diagnosis of colorectal cancer were identified. Of these, 71 patients were 65 years of age or older. Gender: 45 Male/26 Female. The median age was 75.3 years. Sixteen (11%) patients were octogenarians. Fifty-seven patients (78%) showed pre-existing co-morbidities age-related: diabetes mellitus, cardiopulmonary disease, and chronic renal disease. Most clinical cases presented with obstructive ileum symptoms and anemia. Combined neoadjuvant therapies based on radio-chemistry protocols (RT-CHT) were carried out successfully in 9 patients. Surgery was performed in emergency in 4 cases (6%). Most patients had left-sides tumors and underwent to low anterior resection (29 cases: 20.5%), 4 cases of left hemicolecotomy, 3 patients showed an advanced rectal tumor that required Hartman colostomy, 12 cases of sigmoidection, 5 abdominal perineal resection, and 2 cases of subtotal colectomy. Sixteen patients (11.4%) had right-sided tumors and underwent to right hemicolecotomy. In 29 cases was realized a stoma (10 colostomies and 19 loop ileostomies). Laparoscopic approach was proposed in 11 patients, carried out in 7 cases successfully. In 14 patients, a synchronous hepatic metastasis was diagnosed, 4 lung metastasis and 1 case of peritoneal carcinos. In 3 patients combined resection of the primary tumor together with liver metastasis was performed with cyto-reduction intent.

The majority of tumors presented type II cell grading (G2), MSH-2 and MLH-1 gene products were expressed in 97% of all tissue specimens. The serum analysis of tumor antigens (Ca 19-9, CEA, AFP) was negative in 47 cases (66%). According to Astler and Coller's staging of neoplastic disease, this was the pathological founding: Stage A 33%, B1 27%, B2 1%, C1 13%, C2 6% and D 20%. A surgical resection with tumor-free microscopic margins (RO) was archived in 70 cases. Post-operative complications occurred in 48 patients (68%). Of these, 53% concerned medical complications. The major complications were analyzed in according to the American Society of Anesthesiologists (ASA) physiological status scoring system. ASA score, strongly depending to clinical functional status, was a preoperative parameter able to determine the surgical morbidity.

Perioperative mortality rate was 5%. Hospitalization was in media of 15 days and the follow-up for an average of 24 months. Considering the analysis of overall survival and disease-free survival at 24 months, a better trend in term of prognosis was observed in a geriatric cohort of patients with age >70 years. The overall survival at 24 months was 81.4% for patients >70 years vs 70.9% for the younger group. The disease-free survival at 24 months was 81.4% vs 60.6% respectively. Kaplan-Meier curves for the overall survival and disease-free rates showed no statistically significance (p: ns log-rank).

**Conclusion:** Recent studies demonstrated that elderly patients often received sub-optimal surgical and medical treatments because of unacceptable prejudices. The relationship between age and outcomes is complex and depend by differences in tumor-stage and pre-existing co-morbidities. Chronological age alone does not provide sufficient guidance for surgical effectiveness. Key parameters in the surgical risk assessment are represented by biological indexes of each patient. The oncologic results and the morbidity rates of our experience confirm that surgery is a safe therapy in most elderly patients when operative risk and associated diseases evaluation has been careful calculated. The role of surgery in colorectal cancer geriatric patients is well defined in the scientific literature. More comprehensive insights in oncologist surgery of elderly population will derive from the better understanding of the physiology of aging and combined therapies.

### Table 1 (abstract A21)

<table>
<thead>
<tr>
<th>Types of Tumor</th>
<th>&lt;55 yrs</th>
<th>55 to 64 yrs</th>
<th>≥65 yrs</th>
<th>Total patients (n)</th>
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</thead>
<tbody>
<tr>
<td>Benign lesions with discharge</td>
<td>478 (69%)</td>
<td>109 (16%)</td>
<td>105 (15%)</td>
<td>692</td>
</tr>
<tr>
<td>Malignant lesions with discharge</td>
<td>in situ</td>
<td>73 (49%)</td>
<td>29 (19%)</td>
<td>48 (32%)</td>
</tr>
<tr>
<td></td>
<td>invasive</td>
<td>46 (37%)</td>
<td>25 (20%)</td>
<td>53 (43%)</td>
</tr>
</tbody>
</table>
discharge, serous-bloody in 28%, serous in 25% of the cases and 4% of them was of other nature (milky, green or yellow).

**Conclusion:** Our retrospective experience can hereby prove how important it is to keep a high alert about the symptom mentioned above, behind which, according to our evidence, a malignant lesion is often hidden, especially for women over 65 years of age, more than in younger ones. Moreover we want to remind how it is not necessarily a bloody discharge that has to drive the physician’s attention, but also serous discharges can be symptom of galactophorous ducts malignancies.

**A22**

**Outcome of pancreatic resection in elderly patients**

Cosimo Sperti¹, Mario Gruppo¹, Valentina Beltrame¹, Carmelo Militeilo², Mattia Berselli¹, Laura Frison¹, Tiziana Morbin¹, Cristina Longo¹, Valentina Caruso¹ and Sergio Pedrazzoli¹

¹Department of Medical and Surgical Sciences, Clinica Chirurgica IV, University of Padua, Italy
²Department of Surgical and Gastroenterological Sciences, Clinica Chirurgica Geriatrica, University of Padua, Padova, Italy

BMC Geriatrics 2009, 9(Suppl 1):A22

**Clinical background:** The increasing aging of the Western population is obviously accomplished by an increasing number of older patients with cancer, including pancreatic cancer. Since surgical resection remains the treatment of choice for pancreatic and periampullary neoplasms, increasing number of elderly patients are being referred for pancreatic resection. Recently, some surgical experiences reported an acceptable morbidity rate and outcome in patients with advanced age. This retrospective study analyzes the effects of age on short-term and long-term outcome in a large series of patients who underwent resection for pancreatic or periampullary disease.

**Materials and methods:** Data were collected on 317 consecutive patients who underwent pancreatic resection between 2000 and 2007, divided into two groups: group 1, patients under 75 years of age, and group 2, patients with 75 years of age or older. Patients underwent standardized preoperative assessment of general medical conditions, blood tests, tumor marker CA 19-9 determination, abdominal CT scan, and when needed, MRI or PET. Surgical technique included pylorus-preserving pancreaticoduodenectomy for tumors of the head of the pancreas and distal pancreatectomy for tumors located in the body or tail. Total pancreatectomy was reserved for microscopic invasion of the line of resection. For selected cases of benign or border-line tumors a limited resection was performed. The morbidity and mortality rate included all complications or death after surgery until discharge from hospital. In patients with pancreatic cancer, age, stage, lymph node status, grading and radicality of resection were recorded as potentially prognostic factors. Statistical analysis was performed using the SPSS for Windows rel. 15.0. Patient overall survival and disease-free survival (DFS) were evaluated using the Kaplan-Meier method and compared with the Log-Rank test. Independent prognostic variables were examined with Cox regression analysis. Statistical significance was considered as p < 0.05.

**Results:** There were 149 males and 168 females. Fifty-two patients were ≥ 75 years old (19 older than 80 years) and 265 were under 75 years of age. Clinicopathologic features of the two groups are detailed in Table 1. There were no significant differences regarding gender, type of operation, pathologic findings, morbidity and mortality rate between the two age groups. In pancreatic cancer patients (n = 156) tumor grading and radicality of resection were independent prognostic factors for disease-free survival, grading and tumor’s stage were independent predictors for overall survival. Age did not influence disease-free or overall survival both in univariate and multivariate analysis.

**Conclusion:** In accordance to other reports, the results of the present study strongly suggest that age should not be considered as a contraindication for major pancreatic resection. Postoperative morbidity and mortality were not statistically

<table>
<thead>
<tr>
<th>Table 1 (abstract A22)</th>
<th>&lt;75 yrs (n = 265)</th>
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<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>129</td>
<td>20</td>
</tr>
<tr>
<td>Female</td>
<td>136</td>
<td>32</td>
</tr>
<tr>
<td>Pathology</td>
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<tr>
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<tr>
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<td>2</td>
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<tr>
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<tr>
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<td>2</td>
</tr>
<tr>
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<td>4</td>
</tr>
<tr>
<td>Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pancreaticoduodenectomy</td>
<td>141</td>
<td>35</td>
</tr>
<tr>
<td>Total pancreatectomy</td>
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<td>2</td>
</tr>
<tr>
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<td>15</td>
</tr>
<tr>
<td>Central pancreatectomy</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>Duodenum-preserving head resection</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>Operative morbidity</td>
<td>81(30.5%)</td>
<td>17(32.6%)</td>
</tr>
<tr>
<td>Operative mortality</td>
<td>8(3.0%)</td>
<td>3(5.7%)</td>
</tr>
</tbody>
</table>

Clinicopathologic features of the two groups of patients.

**Figure 1 (abstract A22)**

Survival of patients with pancreatic cancer according to age.
different in the two age groups. Similarly survival of patients of 75 years or older resected for pancreatic cancer is not substantially different from the survival expected in younger patients (Figure 1).

A23
To deny or not to deny surgical resection for pancreatic cancer to elderly patients?
Luca Degrate, Francesca Bagnariol, Cinzia Nobili, Patricia Ögolong, Silvia Poli, Claudio Franciosi, Fabrizio Romano, Roberto Caprotti and Franco Uggeri
1st Department of Surgery, San Gerardo Hospital, University of Milano-Bicocca, via Pergolesi 33, 20052 Monza, Italy

BMC Geriatrics 2009, 9(Suppl 1): A23

Background: Population over 65 years old represents the fastest growing group of overall population. Considering that almost 70% of pancreatic cancer patients are over 65 years old, therefore an increasing number of elderly patients should be considered for pancreatic resective surgery. The aim of our study is to compare the outcome after pancreatic resective surgery for cancer between young (under 70 years) and old (over 70 years) patients.

Materials and methods: We reviewed the clinical records of all the patients that underwent radical surgery for pancreatic ductal adenocarcinoma in the period from January 2001 to December 2007 in our department. We collected 66 patients, divided into two groups according to age under 70 (group A) or over 70 years old (group B). For both group we analyzed tumour stage, ASA score, hospital stay length, postoperative morbidities and mortality, overall survival.

Results: Group A is composed by 38 patients (21 male, 17 female, mean age 56.1 ± 8.7 years) and group B by 28 patients (14 males, 14 female, mean age 76.9 ± 3.5 years). The two groups are comparable in terms of surgical procedure and tumor stage; group B patients show a higher ASA score level (p = 0.001 vs Group A). There is no significant difference between Group A and B in mortality rate (2.6% vs 3.6%), postoperative morbidity (60.5% vs 57.2%), hospital stay length (20.8 ± 13.9 vs 18.5 ± 9.1 days) and median overall survival (27.7 vs 15, 9 months, p = 0.08).

Conclusion: This study shows that there is no significant difference in morbidity, mortality and hospital stay length between young patients and old patients, after pancreatic resective surgery for cancer. Although ASA score is higher in old patients, this factor seems not to affect the short-term outcome of these patients. The median overall survival of old patients leans towards being less than young patients (15.9 vs 27.7 months), however, without significant statistical difference. Probably this shortened survival can be explained by a less aggressive chemo-radiotherapy adjuvant treatment that old patients receive. In conclusion, according to literature, age should not be considered a contraindication to pancreatic resection surgery for cancer. Furthermore to elderly patients should be offered the same surgical and adjuvant treatment options as to young patients, taking into consideration pre-operative comorbidities.

A24
The surgical treatment of colorectal liver metastasis in the elderly
Marcello Donati1*, Gregor Stavrou1, Giovanna Brancato2, Angelo Donati2 and Karl Jürgen Oldhafer1
1General, Visceral and Thoracic Surgery Department, (AKH) Celle General Hospital, Celle, Germany
2General Surgery I Unit, Department of Surgical Sciences, Organs Transplantation and New Technologies, University Policlinic of Catania, Italy

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Introduction/aim: The recent advances in the surgical treatment (more precise diagnostic features, new surgical devices, advancement in intensive care) allowed in the last 15 years an extension of surgical indication to a liver resection to a larger population of patients also in the elderly. Aim of this work is to evaluate the indication and limits of the surgical treatment of colorectal liver metastases in the elderly.

Patients and methods: Between April 2002 and January 2008 we had 108 admissions and performed a liver resection for colorectal liver metastases, and we treated 287 colorectal liver metastases on 99 patients. In 57 resections the patient was > 65 years old (Group A) (range 66–83 yrs.), while the remnants were till 65 years old (Group B) (range 40–65). We registered: type of resection, postoperative complications, day of discharge and survival-rate of both groups. We performed such a variety of liver resections in this collective of patients by referring to Brisbane terminology. In all the patients an R0 resection was achieved by intraoperative biopsy of the resected specimen’s margin (Figure 1), and eventually additional resection in doubtful cases or positive pathological response.

Results: In Group A, 10 patients showed a minor complication (grade I–II) (17.5%) and 12 patients a major one (grade III–V) (21%) while in Group B were respectively 10 (19.6%) and 9 (17.6%). In Group A the average postoperative recovery time was 13.5 days (range 6–38), while in Group B it was 12.08 days (range 5–27). In Group A three patients (5.2%) died for major complications, while in Group B we observed 1 perioperative

Figure 1 (abstract A24)

Pathologic specimen. Atypical resection VI–VII segment: almost 1 cm free-disease margin.
death (~2%). The survival-rate was similar in both groups; one and three years overall survival-rate was respectively Group A 68% and 42% vs Group B 65% and 40%.

**Conclusion:** About a half of hepatic resections of colorectal liver metastasis are performed in old patient (over 65 years). Our results suggest that the limits for hepatic resection in the elderly are the same as for younger patients. In the over 65 years group there is the tendency to perform less major liver resections in order to achieve the R0-status. The morbidity seems to be comparable in both groups also if the perioperative mortality is more than doubled in over 65 years patients. The long-term survival-rate is not to correlate to the age of the patients, and also major hepatic resection are relative safe and justified in the elderly in order to achieve oncological results.

**A25**

**Preoperative radiotherapy “short course” in rectal cancer in elderly patient: low impact on tumor regression**

A Fattopace, S Canonico, A Guida, D Scala, F Ruffolo, F Cremona, B Pecori, C Guida, A Avallone, M Di Marzo, F Tatangelo, A Petrillo, P Marone and P Delrio

1 Department of General and Specialist Surgery, Second University of Naples, Italy
2 Colorectal Surgical Oncology, National Institute of Tumors of Naples, Italy
3 Radiotherapy, National Institute of Tumors of Naples, Italy
4 Radiotherapy, Hospital G. Moscato of Avellino, Italy
5 Medical Oncology, National Institute of Tumors of Naples, Italy
6 Pathology, National Institute of Tumors of Naples, Italy
7 Radiology, National Institute of Tumors of Naples, Italy
8 Endoscopy, National Institute of Tumors of Naples, Italy

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**Background:** The aim of the study was to evaluate the impact of preoperative radiotherapy on tumor regression by an assessment of Tumor Regression Grade (TRG) in patients with rectal cancer treated with preoperative short course radiotherapy and then operated on after a medium interval of 30 days.

**Materials and methods:** From July 2002 to September 2008 31 patients were enrolled: 16 women aged between 65 and 77 (average age 71 years) and 15 males aged between 69 and 85 (average age 77 years) with rectal cancer. All patients underwent endorectal ultrasound and MRI pre-and post-radiotherapy treatment. Included patients had rectal cancer T2N0 within 5 cm from the anal margin or patients with cancer of the medium rectum T3 N0 or patients with cancer T3N1/T4 deserving preoperative treatment but not for a combined chemo-radiotherapy due to co-morbidities. All patients underwent a short cycle of radiotherapy 5 × 5 Gy (25 fractions) and then were operated after restaging.

**Results:** Post-radiotherapy complications occurred only in 6 patients (19%): local pain (1), tenesmus (1), erythema (2), actinic proctite (2). The medium time between radiotherapy and surgery was almost 30 days. The post-operative mortality was 6% (2 patients): in both cases the exitus was due to heart failure. Pathological examination showed: 1 T3N2G2; 2 T3N1G2; 4 T3N0G2; 3 T2N2G2; 6 T2N0G2; 1 T1N1G2; 10 T1N0G2; 2 T2N1G2; 1 T2N1G1; 1 T0N0G2. Downstaging of the primary tumor occurred in 79.3% of cases. Average examined lymph nodes number was 42 (range 18–66). TRG analysis showed: 1 TRG 5 (3%); 12 TRG 4 (39%); 9 TRG 3 29%; 8 TRG 2 (26%); 1 TRG 1 (3%).

The 10 N+ patients underwent adjuvant chemotherapy. At a median follow-up of 38 months (range 2–74) there were: 2 local recurrences (1 treated with abdominoperineal resection), 1 lung metastases, 1 liver metastases, 1 brain metastases. Three of them are undergoing second-line chemotherapy. Four patients have died so far (2 post-operatively, 2 spread disease).

**Conclusion:** Short radiotherapy followed by a long interval (30 days) and surgery produces a high rate of downstaging but has a low impact on tumor regression.

**A26**

**The surgical treatment of colorectal cancer in patients over seventy-five years old. Risk factor analysis in patients operated in election and in emergency**

Alban Cacurri, Roberto Cirocchi, Joanna Galanou, Ivan Barillaro, Bledar Koltraka, Francesco Barillaro, Stefano Trastulli, Micol Sole Di Patrizi, Giammario Giustozzi and Francesco Sciannameo

Department of General and Emergency Surgery, S. Maria Hospital, Terni – University of Perugia, Italy

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**Background:** The colorectal cancer has a high incidence and mortality in the geriatric population. However the advanced age does not represent a contraindication for the surgery, and a radical cancer surgical treatment guarantees the same life expectation of younger patients. In this study we analyzed the correlation between comorbidities, postoperative complications and mortality.

**Material and methods:** In our retrospective study we analyzed the clinical notes of 66 patients over 75 years. We assessed the risk factors of the surgical treatment in the elective and emergency management. Among the 47 patients electively treated, 33 were affected by cardiocirculatory diseases, 23 by kidney diseases, 14 by metabolic and endocrine diseases, and 11 patients by respiratory diseases. In the 19 patients, who underwent emergency surgery, 75% had intestinal obstruction, and 25% had intestinal perforation.

In election were performed 14 anterior resection of rectum, 7 abdomino-perineal resections, 4 Hartmann procedures, 11 left hemicolectomies, 8 right hemicolectomies and 3 explorative laparotomies. In emergency were performed 5 ileostomies, 3 colostomies, 5 left hemicolectomies, 3 right hemicolectomies, 2 Hartmann procedures, and 1 explorative laparotomy.

**Results:** In elective surgery the complications were represented by suppuration of surgical wound (21.2% of cases), cytisits (21.2% of cases), bronchopneumonia (6.3% of cases), dehiscence of the anastomosis (2.1% of cases), thrombophlebitis of the lower limbs (2.1% of cases). In emergency the complications were represented by suppuration of the surgical wound in 60% of cases, arrhythmias in 21% of cases, and acute renal failure in 5%. In both elective and emergency surgery for patients without comorbidities there were not deaths. The mortality in patients with comorbidities was 2.1% in elective surgery and 26.5% in emergency surgery.
In election the comorbidities strictly related to the post-operative complications and mortality were the renal diseases, while the cardiocirculatory diseases influenced on post-operative complications only.

Contrary, in emergency the cardiocirculatory diseases influenced significantly the post-operative complications and mortality, while the renal diseases influenced only the post-operative complications.

**Conclusion:** The colorectal cancer in advanced age does not present different characteristics from younger age. Because of the more accurate pre-operative and post-operative therapies it is possible to give geriatric patient the same radical surgery as younger patients. Particularly in elective surgery, thanks to an adequate preoperative preparation, the comorbidities can be corrected ensuring the same prognostic result of younger patients. Contrary in emergency, a considerable disagreement persists in terms of prognosis between geriatric patients and younger patients. This is related to the impossibility of performing an adequate pre-operatory preparation.

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**A27 Voluminous gastric fibrosarcoma in a 75-year-old patient**

Giulio Carcano, Francesco Frattini and Marco Puricelli

Department of Surgical Sciences, University of Insubria, Varese, Italy

**Background:** Gastrointestinal stromal tumors are mesenchymal neoplasms of the gastrointestinal tract, arising from the muscular layer. Recent immunohistochemical studies have shown that up to 94% of GISTs express 117, and 60–70% of GISTs stain for CD 34. GISTs account for 1% of all malignant tumors of gastrointestinal tract; they arise from stomach in the 40–60% of cases whereas they account only for 3% of gastric malignant neoplasms. GISTs can occur at any age but onset most commonly in the sixth and the seventh decades of life.

**Methods:** We report the case of a 69-year-old male patient admitted to our surgical department with weakness, progressive abdominal straining and weight loss of 5 kg in 6 months. Physical examination showed a voluminous mass palpable in the upper- to mid abdomen. The computed tomography (CT) revealed an enormous solid lesion, heterogeneous, polilobate, hypervascular, arising from peritoneal sheet and mesentery, dislocating small bowel and causing hydronephrosis I grade (see Figure 1).

Surgery was performed in October 2008. At laparotomy appeared an enormous solid mass, hypervascular, originating from the anterior wall of the stomach of 15 × 20 cm of diameter. The neoplasm was completely isolated and a partial gastrectomy Billroth 2 was performed along with a partial resection of omentum and the radical excision of the tumor (see Figure 2). The mass weighed 7 kg. The postoperative course was uneventful and the patient was discharged ten days after surgery.

**Results:** The final histological findings confirmed the diagnosis of malignant neoplasm pT2 with fused cells compatible with fibrosarcoma poorly differentiated. The immunohistochemistry of the fused cell showed no positivity for CD 34, actin, ema and cytokeratins. The proliferative index was 7 mitoses per 10 HPF.

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**Figure 1 (abstract A27)**

Abdomen TC.

**Conclusion:** As reported in literature the GIST described in our case presented aspecific clinical finding and a not clear origin at CT scanning. In our case the high mitotic index (>5 mitoses per 10 HPF) and the tumor size greater than 5 cm manifest an aggressive biological behavior associated with a poor prognosis. In this case anyway the tumor doesn’t result positive to CD 117 or CD 34 though presenting fused cells with mesenchimal phenotype.

**Figure 2 (abstract A27)**

Excised mass.
A28
Surgical treatment of retrorectal tumors: our experience in 34 patients
Saverio Coiro, Domenico Spoletini, Fabio Giorgiano, Aldo Nunziale, Elena Manna, Francesca De Lucia and Giuseppe Pappalardo
Department of General Surgery, Surgical Specialities and Organ Transplantation “P. Stefanini”, Umberto I Hospital “Sapienza” University of Rome, Italy
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Background: The retrorectal tumors represent a heterogeneous group of benign and malignant neoplasms which are currently treated without uniform criteria. The most used classifications are based on different histologic origin of these tumors, on their presumed nature (inflammatory or neoplastic), or on their size. A standardization of the surgical approach based on all these characteristics is still now lacking.
Materials and methods: Between 1989 and 2007 we submitted to surgery 35 patients for retrorectal tumors. Two radiologists, who were blind to the patients records, separately reviewed preoperative CT and MR findings and classified the tumors in three groups: group I those arising in the presacral area, group II those arising in the sacrum or spinal cord growing anteriorly, group III those arising in the sacrum growing posteriorly. The aims were: 1) to plan the surgical approach basing on CT and/or MR findings, particularly the possible involvement of adjacent organs; 2) to involve in the surgical planning all the different specialists needed (neurosurgeons, orthopedic surgeons, etc.) to optimize the results, without modifying the surgical program during the procedure.
Results: CT and MR yielded the information required in the surgical planning in 17 of the 18 (94.5%) group I tumors, in all 12 (100%) group II tumors and in 4 of 5 (80%) of group III tumors. In all 18 patients of group I intraoperative reports and the histological examination confirmed the correct preoperative classification. The surgical approach had to be changed in 1 patient (5.5%) of this group. In all 12 patients of group II the preoperative classification was confirmed by intraoperative reports and histological examination. The preoperative classification was confirmed in 4 of 5 group III (80%). In all but one patient the not prevented involving of coccyx needed a change of surgical strategy.
Conclusion: The diagnostic imaging techniques provide the information needed to successfully plan the surgical intervention in most of the patients with retrorectal tumors (in 33/35 patients – 93% in our experience). This information is essential in preoperatively involving different surgical specialists and in planning the surgical approach thus allowing an in optimization of the surgical resection.

A29
Laparoscopic antireflux surgery in the elderly
Rita Compagna, Corrado Rispoli, Nicola Rocco, Antonio Braun, Umberto Avallone and Bruno Amato
Department of General Surgery, University of Naples Federico II, Italy
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Introduction: Laparoscopic antireflux surgery (LARS) has shown excellent results for treatment of gastroesophageal reflux disease (GERD). With success rates between 93% and 97% and a low incidence of complications. Life expectancy in our country is increasing and more patients over 65 years of age are admitted for surgical intervention. The aim of this retrospective study was to compare reflux and five years surgical outcome of laparoscopic antireflux surgery (LARS) in patients younger than 65 years and elderly patients aged 65 years or older.
Materials and methods: From January 2002 to February 2006 84 patients underwent LARS: 24 elderly patients (group 1) that were compared with 60 younger patients (group 2). Three operations were performed: complete 360 degree fundoplication in 42 patients (50.1%), partial posterior fundoplication in 21 patients (22.1%) and partial anterior fundoplication in 11 patients (12.6%).
Results: The conversion rate was higher in group 1 (11.2% vs 7.2%) as was the morbidity rate (6.3% vs 3.1%) in group 2. Mean hospital stay was longer for group 1 (7.5 vs 4.3).
Conclusion: Elderly patients were satisfied with their functional results as were younger patients. In conclusion, LARS in the elderly is a safe and efficient procedure.

A30
Predictive value of IL-6 and IL-10 serum levels in anastomotic leakage in elderly patients undergoing surgery for colorectal cancer
Giovanni Guercio, Bianca Cudia, Calogero Ricotta, Francesco Bavetta and Giuseppe Diana
Department of Surgery, University of Palermo, Italy
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Background: Elderly patients undergo surgery for colorectal cancer more often than younger patients because of the incidence and prevalence of colon and rectal cancer (CRC). Anastomotic leakage is the most feared complication after surgery because it impairs postoperative survival, disease free survival rate and recurrence. A recent meta-analysis shows that interleukin IL-6 and IL-10 intraperitoneal levels may be a useful marker to predict the likelihood to anastomotic leakage. Furthermore, the variations of cytokines levels are similar both in serum and intraperitoneal...
fluid, despite there is a quantitative difference between peritoneal and systemic concentrations. For this reason in our Department a prospective study is ongoing to assess if systemic interleukin IL-6 and IL-10 are a reliable marker to predict anastomotic leakage.

**Methods:** The study group is yet represented by 33 patients: 17 males and 16 females (median age 76, range 70–89). The location of cancer was respectively: 5 (15, 15%) in the rectum, 15 (45, 45%) in the left colon, 11 (33, 33%) in the right colon, 1 (3, 3%) in the transverse colon, 1 (3, 3%) synchronous in the caecum and the sigmoid colon. The associated diseases observed were: chronic obstructive pulmonary disease, hypertension, diabetes mellitus, ischemic heart disease arterial vasculopathy. The surgical operations performed were respectively: 11 left colectomies, 8 right colectomies, 2 subtotal colectomies, 6 segmental resections, 3 anterior resections, 1 bypass anastomosis, 2 abdominoperineal excisions. In our study group we made 31 digestive anastomoses. Systemic measurements of IL-6, IL-10, C-reactive protein (CRP), lymphocytes and serum albumin were performed with ELISA in the preoperative period (t0), in the first (t1) and seventh postoperative day (t2).

**Results:** In the study group 32 anastomoses were made and we observed only one (3.2%) anastomotic leakage. The CRP serum levels (mg/l) were: t0 24.63 ± 4.17, t1 25.62 ± 5.63, t2 21.5 ± 4.41 in complicated patients and t0 24.64 ± 5.18, t1 24.4 ± 7.15, t2 22.4 ± 7.99 in uncomplicated ones. IL-6 serum levels (pg/ml) were: t0 8.13 ± 3.31, t1 145.87 ± 88.62, t2 19.75 ± 23.56 in complicated patients and t0 6.74 ± 4.9, t1 118.36 ± 57.64, t2 19.32 ± 15.08 in uncomplicated ones. IL-10 serum levels (pg/ml) were: t0 4.63 ± 2.13, t1 19.52 ± 8.38, t2 5.75 ± 4.23 in complicated patients and t0 16.92 ± 18.10, t1 20.28 ± 18.18, t2 5.2 ± 2.61 in uncomplicated ones. Albumin serum levels (g/dl) were: t0 3.68 ± 0.42, t1 2.34 ± 0.70, t2 2.85 ± 0.83 in complicated patients and t0 3.71 ± 0.60, t1 2.82 ± 0.54, t2 3.30 ± 0.53 in uncomplicated ones. Lymphocytes (n°/µl) were: T0 2315.7 ± 854.5, t1 864.28 ± 404.18, t2 1502.85 ± 441.57 in complicated patients and t0 1580 ± 684.79, t1 920 ± 407.55, t2 1312.30 ± 415.15 in uncomplicated ones. These values and their variations are showed in Figures 1, 2, 3, 4, 5.

**Conclusion:** Recent studies show that preoperative IL-6 and IL-10 serum levels are higher in patients with colorectal cancer than in control patients. Our study is still ongoing and it suggests that the measurement of cytokines serum levels is not useful in predicting anastomotic leakage. Despite this, we want to investigate, in particular, the role of IL-10. This cytokine influences the T-helper linked immunological response (suppression activity) and it may have a role in favoring anastomotic leakage. However, because the study is still ongoing, we need to evaluate more data to investigate the role of cytokines in anastomotic leakage.
A31
The treatment of bleeding peptic ulcer in the elderly
Margherita Fezzi, Mauro Roseano, Angelo Turollo and Gennaro Liguori
Istituto di Clinica Chirurgica, University of Trieste, Trieste, Italy

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Background: In the last decades the incidence of peptic ulcer disease (PUD) has increased especially in the elderly. Haemorrhage is the most frequent PUD complication and its incidence is increasing in comparison to perforation and stenosis. Therapeutic endoscopy is considered the treatment of choice for bleeding ulcers, reducing the need for emergent surgical procedures to 10–20% of the cases.

Patients and methods: This retrospective study investigates a consecutive series of 98 patients, hospitalized for bleeding peptic ulcer, within 7 years, in General Surgery Unit, University of Trieste. The incidence was slightly higher in the males (53 males and 45 females), with a median age of 68.64 years (range: 17–99). 30 patients were <65 years, 25 between 65 and 74 years, 27 between 75 and 84 years and 16 >84 years.

The position of the ulcer resulted duodenal or pre-pyloric in the majority of the cases, without any statistically significant difference in the various age groups (Pearson Chi-Square (p) < 0.492). Sixty patients presented with co-morbidities: cardiovascular in 28 cases, arterial high blood pressure in 20, respiratory in 11, neurological in 6, haepatic in 3, renal in 2, diabetes in 8, rheumatoid arthritis in 2, tumors in 5 and recent surgical procedure of inguinal hernio-plastic in 1. In 28 cases there was only one concomitant pathology, in 19 cases 2 and in 13 cases more than 2.

The management of these patients starts with a diagnostic esophago-gastro-duodenoscopy (EGDS), followed by endoscopic therapy in case of active haemorrhage. Patients without active bleeding are treated medically with proton pomp inhibitors and with Helicobacter pylori eradicative treatment, if present. In the event of re-bleeding a new EGDS is required with further endoscopic haemostasis in the presence of active bleeding. Suspcion of bleeding is based on melena or hematemeses or a progressive decrease of the hematocritus. Patients judged technically ineligible for further endoscopic haemostasis, are treated with emergent surgery.

In the case series, EGDS was performed in 96 out of 98 patients because 1 patient refused any medical procedure and 1 underwent an emergency operation for haemorrhagic shock. In 36 cases, the EGDS failed to show any sign of active bleeding, whereas in 60 cases bleeding was present and haemostasis was performed. Of these 60 cases with active bleeding, 17 were <65 years, 16 were between 65 and 74 years, 14 were between 75 and 84 years and 13 were >84 years (p = 0.478).

The study evaluated the incidence of re-bleeding and the type of treatment used, the mortality and the complications in the different age groups in relation to the type of treatment and the correlation between the number of endoscopic haemostasis and mortality.

The statistical analysis, univariate and multivariate, was performed with SPSS. Multivariate analysis aimed at estimating the role of age, ulcer’s position, ASA score, type of treatment, number of transfusions and number of EGDSs on hospital mortality and morbidity was performed with the use of the blocks model.

Results: Of the 60 patients with active bleeding, 40 (66.6%) had their haemorrhage resolved with the first endoscopic treatment. Their ages were: 12 <65 years, 10 between 65 and 74 years, 12 between 75 and 84 years and 6 >84 years. As for the 20 patients with re-bleeding, 17 were submitted to a new endoscopic haemostasis and 3 to surgical procedures. Of these 17 treated with a new endoscopic haemostasis, 7 were <65 years, 4 between 65 and 74 years, 5 between 75 and 84 years and 4 >84 years. The second endoscopic therapy resolved bleeding in 4 additional cases (25.6%). The remaining 13 patients experienced additional bleeding and were treated in 9 cases with a third endoscopic haemostasis and in 4 cases with surgery. The third endoscopic treatment, resolved bleeding in 2 additional cases. The remaining 7 patients experienced additional bleeding and were treated in 3 cases with a fourth endoscopy and in 4 cases with surgery. Only 1 out of the 3 cases treated endoscopically achieved the resolution of the hemorrhage whereas the 2 with persistent bleeding were treated in 1 case with a fifth endoscopic haemostasis and in 1 case with surgery. The failure of the fifth endoscopic haemostasis required surgical intervention. In conclusion, medical and endoscopic treatment, even when repeated, resolved hemorrhage in 47 out of 60 cases (78.3%). Of these 47 cases, 15 were <65 years, 12 between 65 and 74 years, 14 between 75 and 84 years and 6 >84 years (p = 0.764). Fourteen patients underwent surgical procedures, one patient immediately and 13 due to failure of the EGDS therapy. Of these 14 cases, 4 were <64 years, 2 between 65 and 74 years, 5 between 75 and 84 years, and 3 >84 years (p = 0.687). None of them presented with bleeding after the operation.

Seven patients out of 98 died (7.1% mortality). Two of them were between 75 and 84 years and 5 >84 years. There were no deaths among the youngest (p = 0.000) patients. The number of deaths among ASA1, ASA2, ASA3, and ASA4 classes (p = 0.002) were respectively 0, 4, 0 and 3. None of the 36 patients submitted only to medical therapy died; 4 of the 47 (8.5%) patients submitted to endoscopic and medical therapy died: 3 of the 14 (21.4%) patients operated died (p = 0.034). Three patients died after the first haemostasis, 3 after the second and 1 after the fourth. There were no deaths after medical therapy, 2 deaths from hemorrhage and 2 from non-correlated pathologies after endoscopic and medical therapy. Surgical mortality was due in 1 case to hemorrhagic shock and in 2 cases to surgical complications.

Complications were present in 2 patients <65 years, none between 65 and 74 years, one patient between 75 and 84 years and 5 patients >84 years (p = 0.006). Patients treated with medical therapy didn’t experience any complication. Among those 47 patients treated with endoscopic and medical therapy there were 4 complications. There were 5 complications among those 14 who underwent surgery (p = 0.001). There were 3 mortal hemorrhagic bleedings, 5 mortal cardiac complications and 2 intra-abdominal abscesses.

At logistic regression the age, the ASA score and the type of treatment had resulted correlated to mortality. The same variables had resulted also correlated to morbidity. Finally, the ulcer’s position, the number of transfusions and the number of EGDSs don’t seem to have conditioned the results.

Conclusion: The evaluation of the treatment outcome in our series of patients suggests that endoscopic haemostasis and medical
treatment should be the first therapeutic option in ulcer cases with active bleeding. In the event of re-bleeding, repeated endoscopic haemostasis is indicated. The need for surgery is limited among cases where haemostasis can’t be performed due to the position of the ulcer or the type of bleeding. In our experience, repeating the endoscopic therapy has not increased the mortality risk for the patient. In fact, deaths are more frequent after the first and the second haemostasis. In the majority of cases the resolution of the haemorrhage was achieved with the first or second endoscopic haemostasis. Successive haemostasis had a lower probability to resolve the bleeding after the second re-bleeding. In the elderly and in the patients with elevated surgical risk, the decision to extend endoscopic treatment should be made on the basis of the endoscopic findings and the patient’s general condition. In the last years besides the success of angiographic embolization in the containment of massive haemorrhage must also be taken into account. The trans-catheter arterial embolization is also an effective and safe treatment in patients with duodenal ulcers re-bleeding after therapeutic endoscopy or surgery.

Presently the patients are in good health without any biliary signs and symptoms.

**Conclusion:** The diagnosis of gallstone ileus is difficult, in 50% of cases it is often made at laparotomy. Choice of surgical procedure must be determined by the clinical condition of the patient and by intraoperative evaluation. Doko et al agreed that the one-stage procedure should be reserved only for highly selected patients with absolute indications. Enterolitotomy alone is the elective surgical option in unstable elderly patients (mortality rate of 11.7% vs 16.9% for the one-stage procedure) and subsequent cholecystectomy is not mandatory. Recently, laparoscopy-guided enterolitotomy has become the preferred surgical approach in treating gallstone ileus. Cholecystostomy with enterolitotomy might be an adequate treatment, in selected cases, for reducing the risk of early re-operation due to biliary pathology recurrence. Potential cholecystectomy and fistula closure would be performed only after a complete patient stabilization.

**A32**

**Report of two cases of gallstone ileus and literature review**

Pamela Del Monaco, Carla Migliaccio, Francesco La Mura, Eriberto Farinella, Lorenzo Cattorini, Roberto Cirocchi, Valerio Mecarelli, Giammario Giustozzi and Francesco Sciannameo

Department of General and Emergency Surgery, S. Maria Hospital, Terni – University of Perugia, Italy

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**Background:** Gallstone ileus is a rare but potentially serious complication of cholelithiasis, prevailing in female elderly patients in whom it represent the third cause of mechanical bowel obstruction. Debate currently exists regarding the appropriate surgical strategy. We report two cases of gallstone ileus and review of the literature.

**Materials and methods:** Two female elderly patients (83 and 87 years old) recently came to our attention for a mechanical bowel obstruction. Their routine blood investigation revealed only high urea, creatinine and phosphates. Ultrasonography showed scleroatrophic lithiasic cholecystitis. The abdominal X-ray didn’t show any sign of Rigler’s triad, except for small bowel obstruction. Laparotomy displayed scleroatrophic lithiasic gallbladder firmly adherent to the second portion of duodenum with intense surrounding inflammation due to cholecystoduodenal fistula. Also a gallstone, measuring approximately 3 × 2 cm (case 1) and 6 × 5 cm (case 2), was found impacting the ileum. The surgical strategy, chosen according to the clinical status of these patients (ASA3) and the difficult identification of Calot’s triangle, consisted in performing an enterolitotomy and cholecystostomy through a Petzer catheter, after removing multiple gallstones and biliary sludge.

**Results:** In postoperative course it was only observed, in case 2, slight temperature and neutrophil leukocytosis, solved in few days without complications. Drainage removal in 10th p.o. day (case 1) and in 12th p.o. day (case 2); Discharge was in 12th and 15th p.o. day respectively; Petzer catheter was removed two months later after ultrasonographic and cholecystographic evaluation.

A33

**Hyperthroidism in the elderly: surgical treatment**

Andrea Venturoni1, Vittantonio Mongelli1, Gianfranco Amicucci1 and Sergio Leardi2

1Surgery Unit, University of L’Aquila, L’Aquila, Italy
2Geriatric Surgery, University of L’Aquila, L’Aquila, Italy

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**Background:** Hyperthyroidism in elderly patients is not to be underevaluated, since it is characterized in such an age range by particular clinical and prognostic features, surgery is the principal treatment of hyperthyroidism, even if therapy and percutaneous alcoholization may play an alternative role in some cases. However the surgical risk may be high in elderly because the absence of comorbidity. The aim of this study is to evaluate the early and later prognosis after surgical treatment of hyperthyroidism in geriatric patients.

**Materials and methods:** In the period between 1978–2008 out of 2167 patients surgically treated for thyroid disease on Surgery Unit of University of L’Aquila, 233 (10.7%) subjects presented hyperthyroidism: 46 were in geriatric age range (mean age 76 yr.; 37 females and 9 males). Thirty-three presented a Multinodular Toxix Goiter (71.7%), whereas 9 patients complained of Plummer Adenoma (19.6%); only 4 patients showed Graves-Basedow disease (8.7%). The records of patients were reviewed retrospectively in order to assess ASA index, clinical findings, indications and type of surgery, postoperative morbidity and mortality. Clinical and humoral follow-up was implemented to evaluate the prognosis at 6 and 12 months post treatment.

**Results:** As for ASA classification, there were 10 ASA I, 31 ASA II and 5 ASA III. Compression of digestive tract and/or respiratory airway represented a surgical indication in 22 patients (44.8%). 15 (32.6%) were operated due to predominant cardiac symptoms (tachycardia, atrial fibrillation). The remaining 9 patients (19.5%) were treated for the concomitance of atypical symptoms of hyperthyroidism. (restlessness, apathy, hypertension, anorexia, depression, loss of weight, perspiration). We performed 24 total thyroidectomy, 7 “near totally”, 8 sub-total, 7 euthyroidectomy in case of Plummer adenoma. Postoperative mortality was nihil; p.o. morbidity was 6.5% for medical conditions (pneumonia) and surgery-related (1 laringeal recurrent paralysis and 1 hypoparathyroidism) in
Background: Presacral tumors are most frequently benign, occasionally malignant with a slow growth. Their incidence is 0.5%. Post-operative follow-up, conducted at 6 and 12 months from the operation, showed regression of hyperthyroidism and regression or improvement of all clinical symptoms complained by the patient.

Conclusion: Surgical treatment seems to be the only immediate and definitive cure for hyperthyroidism. Geriatric age does not seem to be a surgical contraindication.

A34
Quality of life in elderly patients after inguinal hernioplasty
Rosalia Patti, Emanuele Picone, Paolo Aiello, Sergio Sammartano, Giovanni Migliore and Gaetano Di Vita
Department of Surgical and Oncological Sciences, Division of General Surgery, University of Palermo, Palermo, Italy
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Background and aim: Inguinal hernia is the most frequent abdominal wall hernias in elderly population. Surgical treatment must be aware of the cardiovascular and respiratory disease these patients are often affected by. Inguinal hernia is responsible for pain and is a surgical contraindication.

Materials and methods: Fifteen male patients of age ≥75 years affected by symptomatic unilateral uncomplicated inguinal hernia were included in this study. All patients undergoing inguinal hernioplasty in local anaesthesia according to the Liechtenstein technique. The SF-36 questionnaire was administered to each patient the day before and 6 months after surgery. Global analysis of the 8 domains of SF-36 and 2 comprehensive indexes of SF-36, Physical Component Summary (PCS) and Mental Component Summary (MCS) were performed.

Results: Inguinal hernioplasty originated no postoperative complications, in particular no patients complained of chronic pain after surgery. Six months after surgery, all 8 domains of SF-36, and MCS and PCS scores improved remarkably as compared with the preoperative time.

Conclusion: Inguinal hernioplasty in elderly patient is a safe and effective procedure. Although the major surgical stress observed in these subjects, the improvement of QoL, as attested by significantly increased in SF-36 scores, represent a clear-cut indication for elective inguinal hernia repair.

A35
Presacral myelolipoma in a geriatric patient
Alessandro Spizzirri, Carla Migliaccio, Lorenzo Cattorini, Vincenzo Napolitano, Pamela Del Monaco, Maurizio Bravetti, Marco Coccetta, Roberto Cirocchi, Giammario Giustozzi and Francesco Sciannamoe
Department of General and Emergency Surgery, S. Maria Hospital, Terni – University of Perugia, Italy
BMC Geriatrics 2009, 9(Suppl 1):A35

Background: Presacral tumors are most frequently benign, occasionally malignant with a slow growth. Their incidence is 1:40000 and they are asymptomatic in the 26–50% of cases. When visible symptoms occur, these are related to the dimensions of the tumor, to its location and to the presence of infection. We believe all presacral tumors should undergo a surgical resection, even if the patient is asymptomatic and these are more frequently benign tumors.

Materials and methods: We report the case of a 69-year old woman with a lower abdominal pain associated with paresthesia and hypostenia of the right inferior limb. Digital examination of the rectum let esteem a fixed, mild tender and hard tumor of the posterior external wall of the rectum. The C.T. guided biopsy gave insufficient results for a diagnosis. MRI allowed to appreciate and reveal a solid, dishomogeneous structure, capsule mass located in the presacral region with diameters of about 9.5 × 7.5 × 9 cm, adherent to the body of the sacrum, with connective likely origin, in the absence of lymphadenopathy of the small basin. Surgical intervention showed a tumor tenaciously adherent to the sacrum.

Results: Patients with myelipoma are generally old-aged, female and without alterations in the periferal blood slide or hepatosplenomegalia, however these tumors can be associated with endocrine disfunctions. Usually myelopomas are single and the adrenal gland is the most common location however in a half of the cases reported in literature they are located in the presacral region. They are often asymptomatic and this characteristic could be a good aid for the differential diagnosis with symptomatic tumors or those having a bony involvement like “cordomii”. Usually these neoplasms result capsulate, strictly adherent without infiltrating the neighboring structures, well circumscribed, with variable dimensions up to several cm in diameters (maximum 12) and weights between 70 and 400 gr.

Conclusion: In literature the surgical approach to the presacral space is described by anterior or posterior way or a combination of these. The Authors’ opinion is that the en-block resection of these tumors with an anterior surgical approach allows a diagnosis of the nature of the disease and it is the best treatment for malignant lesions, which are frequently radio and chemotherapy-resistant. Anyway it is important to consider that these tumors are easily bleeding because of their connections with the presacral venous plexus.

A36
Self-expandable metallic stent for treatment of malignant colorectal strictures in elderly patients: our experience
F Cantarella1, P Ricci1, E Cavazzoni1, L Graziosi1, N Abu Qweider1, W Bugiantella1, S Mosca2 and A Donini1
1Department of Surgery, Section of General and Emergency Surgery S. Maria della Misericordia Hospital, University of Perugia, Perugia, Italy
2Section of Radiology, S. Maria della Misericordia Hospital, University of Perugia, Perugia, Italy
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Background: Intrinsic obstruction caused by primary or recurrent adenocarcinoma and extrinsic invasion/compression due to pelvic malignancies represent the main causes for malignant colorectal obstruction. Most of the patients with acute or chronic large bowel obstruction are often in poor general condition (severe dehydration, electrolyte imbalance, advanced age, co-pathology) facing high risks as surgical candidates. Self-Expandable metallic stents (SEMS) allow rapid decompression of colonic obstruction reducing operative procedures of 23% and number of colostomies from 43% to
7%, which result in a worsening of the quality of life and higher costs. The end-point of our preliminary experience is to evaluate if colonic stenting is feasible for both palliation or “bridge” to surgery in elderly patients.

**Materials and methods:** From December 2007 to November 2008 at our Unit, three patients underwent colonic stenting: an 88 year old male, suffered for cardiac ischemia and obstructive respiratory syndrome, affected by stenotic and metastatic sigmoid neoplasia (stage IV); a 72 year old female affected by endometrial adenocarcinoma relapse infiltrating the left urether and the sigma; a 68 year old female affected by locally advanced and metastatic adenocarcinoma of the recto-sigmoid junction (stage IV) (Figures 1, 2).

All patients received WallFlex™ colonic stent. Prophylactic antibiotics were administered. Stent insertion was performed under fluoroscopic guidance (Figures 3, 4, 5, 6). Patients had a plain abdominal radiograph 48 hours later to confirm stent full expansion.

**Results:** In all patients successful decompression, defined as complete relief of bowel obstruction as judged by clinical symptoms and radiographic observation, was achieved. No precocious or posthumous complications were observed.

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**Figure 1 (abstract A36)**

Locally advanced adenocarcinoma of the recto-sigmoid junction.

**Figure 2 (abstract A36)**

Tight stenosis of the rectum at gastrografin enema.

**Figure 3 (abstract A36)**

PET-CT aspect at 5 months from stenting procedure in 72 yo female affected of endometrial adenocarcinoma relapse. Cross section.

**Figure 4 (abstract A36)**

Frontal section.
first patient died 1 month later for disease progression. The second patient underwent the VIII cycle with Adriamicina and Cisplatino. At 9 months from stent insertion a CT exam showed disease progression, no sign of stent dislocation (Figures 5, 6). The last patient has completed the I cycle with FOLFOX.

**Conclusion:** Our experience suggests that colonic stenting in elderly patients is safe and minimally invasive, allowing a colonic decompression in both intrinsic and extrinsic neoplasia, with a better quality of life, less morbidity, mortality and costs. It doesn’t affect the median survival compared with surgery.

**A37**

Giant paraesophageal hernia in an elderly woman: laparoscopic fundoplication and mesh in the hiatus

S Ricciardi, R Gianesini, E Mion, P Mainente, S Faccin and L De Santis

General Surgery Unit, “San Lorenzo” Hospital, Valdengo, VI, Italy

**Objective:** Large hiatal hernias are more common in older patients and they are more likely to be female. In addition, the patients who underwent operation for large hiatal hernia are on average 20 years older than patients without hiatal hernias treated for elective antireflux surgery. The laparoscopic surgery rapidly became the more acceptable approach for gastroesophageal reflux disease and repair of any associated hernia, not only for surgeons but also for the medical community. The objective of this study is to analyze the feasibility, the safety and the efficacy of laparoscopic repair of giant paraesophageal hernia in an elderly woman.

**Figure 1 (abstract A37)**

Chest X-ray showing an air fluid level in the retrocardiac position.

**Figure 2 (abstract A37)**

Preoperative Barium esophagogram showing a large paraesophageal hernia.
and the patient was able to tolerate a soft diet within 3 days after surgery and was discharged on the 10\textsuperscript{th} day (Figure 3). At 9 months follow-up she has no complaints of heartburn, regurgitation or dysphagia.

**Results:** Complete resolution of the disease and of the symptoms.

**Conclusion:** This report confirms the feasibility, effectiveness of laparoscopic repair of a large hernia in the elderly. Moreover, a prosthesis must be used when defect's size precludes tension free repair. However, closure of the diaphragmatic defect with prosthetic material is not immune from the problem of erosion and migration.

Outcome depend more on surgeons possessing advanced laparoscopic skills and clinical experience.

In selected patients and properly managing the underlying medical problems, the laparoscopic surgery for hiatal hernia should not be refused solely on the basis of the age.

**A38**

A new way of collecting and filling data in the outpatient clinic for proctologic diseases

L Moletta and P Petrin

Clinica Chirurgica IV, Padova, Italy

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**Aim of the study:** Proctologic diseases appear to be more frequent in geriatric age: constipation, hemorrhoids and rectal prolapse are some of the most frequent ano-rectal disorders in elderly patients. Repeated clinical controls of the patients are necessary for monitoring the evolutions of the clinical conditions. The usual written report can hardly outline the objective situation and define the changes obtained by the performed treatments. A new method of recording the proctologic outpatients’ data, by means of a specific electronic file, has been tested. The aim is to reach a precise visual documentation of the pathologic situation before and after the treatments required as well as to electronically record, easily recall and statistically process the patients’ data.

**Materials and methods:** The electronic database has been created utilizing Microsoft Office Access 2007. In each patient file are stored the digital images obtained by means of a reflex Canon EOS 400D camera with macro lens and flash. In the presence of intraluminal pathologic condition, a craftmade proper introducer has been attached to the camera so adapting the lens to the caliber of the anoscope.

**Results:** The new method of filing has been applied on 112 outpatients visited between January and October 2008, and retrospectively on 318 outpatients visited between January 2004 and December 2007. The mean age was 52.05 years (range: 23–95 years, standard deviation: 16.34): 20% of patients was older than 65. Among these patients, the most frequently complained symptoms were small amounts of red bleeding (with a frequency of 60% at the first visit), anal pain (35%), bowel disorders (28%). The three most frequent diagnosis were hemorrhoids (60% of outpatients), fissures (13%) and rectal prolapse (9%). The following figures refer to rubber band ligation of mucosal prolapse, to hemorrhoids sclerotherapy and to stapled hemorrhoidopexy of grade III hemorrhoids according with Longo technique.

**Conclusion:** The new method of achieving and storing data and images seems able to produce some clear results in the proctologic...
A39
Surgery for obstructed defecation in over 65 year old patients
Silvia Savastano1, Massimo Vecchiato1, Giacomo Sarzo1, Mario Gruppo1, Roberto Cadrobbi1, Elisa Marcellan1, Isabella Mondi1, Francesco Cavallin1, Giuseppina Bazzolo1 and Stefano Merigliano1
1University of Padua, Department of Surgical and Gastroenterologic Sciences, 3rd General Surgery Clinic, Coloproctological Unit, S. Antonio Hospital, Italy
2Istituto Oncologico Veneto (IOV-IRCCS), Padua, Italy
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Background: The treatment of obstructed defecation is one of the currently most debated topics in the field of surgery of the pelvic floor. For elderly people conservative options are often suggested. The aim of this study is to report clinical results of three different surgical approaches for the correction of rectocele and anorectal prolapse.

Materials and methods: 32 over 65 years old patients underwent surgery for obstructed defecation syndrome and then observed prospectively by the Coloproctological Unit of Surgical Clinic III, S. Antonio Hospital, Padova, from 2001 to 2007. All patients were evaluated with a dedicated questionnaire: Knowles-Eccersey-Scott score (KESS) for all patients and Obstructed Defecation score (ODS) for two groups, proctological and gynecological examination, colpocystodifecography before surgery and 6 months afterwards.

The three surgical techniques adopted were: posterior colporrhaphy and rectal mucosectomy with mechanical circular stapler PPH01® (Ethicon Endo Surgery, Cincinnati, OH, USA) (CPR-PPH Group), stapled transanal rectal resection with two stapler PPH01® (STARR Group) and stapler rectal resection with CCS30 Contour Transstar® (Transtar Group).

In two cases we associated laparoscopic assistance to transanal technique in general anaesthesia for suspected enterocele not confirmed by peritoneal exploration. All other operations were performed in spinal anaesthesia.

Results: There was an improvement of post-operative symptoms in all approaches without significant differences between the techniques. There was one major complication (suspected microperforation of the rectum resolved with conservative therapy) in the Transtar Group. Medium KESS score significantly decreased in all groups (from 16.2 to 4.8 in the first group, from 18.8 to 5.7 in the second group, from 21.8 to 5.8 in the third group, p < 0.0001 Wilcoxon’s test). Also Medium ODS significantly decreased in the two groups analyzed (from 17.7 to 3.3 in STARR Group, from 21.2 to 4 in Transtar Group, p < 0.0001 Wilcoxon’s test). The STARR technique showed a benefit in reducing the operating time, the maintenance of urinary catheter and hospital stay.

Conclusion: The surgical approaches proposed showed effectiveness and safety in improving symptoms of obstructed defecation. This surgery fits also elderly patients because of reduced operative time and hospital stay and reduced maintenance of urinary catheter.

A40
Surgical management of anal stenosis
I Selvaggio, F Cadeddu, M Grande and G Milito
Department of Surgery, University Hospital Tor Vergata, Rome, Italy
BMC Geriatrics 2009, 9(Suppl 1):A40

Background: Benign anal stenosis is an uncommon, disabling and incapacitating disease, occurring mainly after anorectal surgery. To date, ideal management of this problem has not been well defined. Different surgical options have been described in literature to treat anal stricture and every flap anoplasty presents advantages and limitations. We retrospectively analyzed the results of the surgical treatment of this disease in the Coloproctology Unit of our Department.

Methods: A retrospective study was undertaken over a 17-year period (1987–2003) for consecutive patients operated on for anal stenosis. Duration of operation, success rate, post-operative complications, recurrence and time to recurrence were assessed in all patients.

Results: We treated 75 patients with anal stenosis and moderate to severe symptoms; hemorrhoidectomy was the most common cause of anal stenosis (75%); 52 patients underwent Y-V anoplasty (69.3%), 20 bilateral and 32 unilateral; 23 patient underwent house flap anoplasty (30.7%) for posterior stenosis. Good to successful results were obtained in 94% in Y-V patients and in 97% in house flap patients. Overall, in the 75 patients, a 3% rate of flap necrosis was observed and 4% of patients experienced minor complications.

Conclusion: Scarring of the anal canal represents a disabling condition of anal surgery or disease, extremely difficult to manage. Many different surgical techniques have been described. Effective handling of the anal stenosis changes according to centres, countries and surgeon experience. Symptomatic mild functional stenosis may be treated conservatively with diet, fiber supplements, and stool softeners. In patients with moderate to severe symptoms or when the conservative treatment failed, sphincterotomy and various anoplasty techniques have been suggested. The technique to choose depends on surgeon experience, level, extension and severity of the stenosis.

A41
Is age a limit for surgical treatment of gastric cancer?
Alessandro Uzzau, Gaetano Filippone, Floriana Carrer, Blerta Elezi, Daniele Pontello, Vittorio Barucchello, Enrico Benzoni, Prashanthi Narisetty and Dino De Anna
Department of General Surgery, Innovatory Program of Biotechnology, School of Medicine, University of Udine, Udine 33100, Italy
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Aim of the study: The incidence of the gastric cancer is 23% of all the tumours in Europe, and increases with progressing by age with a prevalence of 140 by 100,000/year for the subjects with more than 75 years. To the light of this consideration we
analysed retrospectively the results obtained with the surgical therapy of the gastric cancer in the elderly patient.

**Materials and methods:** From 1989 to 2007, 291 consecutive patients underwent surgical resection with curative (R0) intent. We have collected and analysed data concerning the characteristics of the patients, type of surgical treatment and the tumour itself. Data processing was performed using SPSS 13.0 for Windows Evaluation Version (SPSS Inc., Chicago, IL, USA).

**Results:** Mean age was 65.7 years (± 11.22). Patients were divided into 2 groups: ≤70 years ("young") and >71 years ("elders"). The first group included 177 patients (60.8%), and the second 114 (39.2%). ASA score has been expressed in all the cases: 81.9% of the young patients had ASA 1–2, while 96.5% of the elderly patients had an ASA between 2 and 3 (p < 0.0001). Other significant difference has been the higher tumoral infiltration level (T) in the group of young patients (p = 0.035). As regards the lymphonode involvement we have considered the Lymphonode ratio (LR). The observed values have been assembled in three categories: 0%, 1–30% and >31%. In young people we have respectively observed for the three categories a rate of 40.1%, 33.3% and 26.6%, while in the elders 53.3%, 28.1% and 18.4% (N.S). However, taking into consideration the stage of the tumor, a tendency emerged in young people to show a more advanced stage with respect to the elderly patients (p = 0.026). The evaluation of the histological type according to Lauren has highlighted the presence of the diffuse pattern in 54.2% of young people with respect to the 36.0% of the elders (p = 0.002). Post-operative morbidity, divided into those of infectious type (abscesses, peritonitis, sepsis), cardio-respiratory and techniques (anastomotic leak) have respectively, in young and elders group, of 5.1% and 7.9% (infectious); (p = ns), cardio-respiratory of 6.2% and 19.3% (p = 0.001), anastomotic leak of 2.3% and 5.3% (p = ns). Actuarial survival at 1 and 5 years has been respectively 84.7% and 44% in the young group, and 72.8% and 31.6% in the elderly (p = 0.002), (Figure 1). But these differences disappear comparing survival and the ASA score between groups (Figures 2, 3).

The rate of tumor relapse has been of 41.2% in young people and 28.9% (p = 0.033) in the elders. At the multivariate analysis stage of the disease and the ASA score resulted negative prognostic factors for young patients, while LR, ASA score and anastomotic leak in the elders group.

**Conclusion:** Age is not a factor limiting surgical therapy for patients affected by gastric cancer. Patients over 70 benefit from gastrectomy and/or gastric resection in terms of disease-free survival with an outcome comparable to the young patients. Particular attention must be placed to rule out and correct invalidating systemic pathologies.

**Figure 1 (abstract A41)**

Actuarial survival (Kaplan-Meier).

**Figure 2 (abstract A41)**

**Figure 3 (abstract A41)**

**A42 Laparoscopic colic resection in the elderly: a comparative study**

P Vanini, S Bolzon, L Possamai, G Trotter, G Anania, M Santini, G Ferrocci, A Marzetti, G Cavallesco and G Azzena

Department of Surgical, Anaesthesiologic and Radiologic Sciences. Surgery Unit, Ferrara, Italy

**Introduction:** The purpose of this study was to evaluate any relative benefits for laparoscopic colectomy in patients over 70 years old compared with under 70 years old.
Methods: We did a comparative review including the last 65 laparoscopic colic resection in patients over 70 years old matched to 58 patients under 70 years old underwent laparoscopic colic resection.

Patients were divided in two cohorts and compared: group 1 (laparoscopic colectomy over 70 years old) consisted of 65 patients; group 2 (laparoscopic colectomy under 70 years old) consisted of 58 patients.

We collected for all patients ASA class, type of segmental resection, operative time, mean postoperative complications (morbidity and eventually mortality), length of hospital stay, 30-day re-admission rate, time of the first flatus and bowel movement.

Results: We noted the major differences in term of first flatus (3.9 days in the group 1 and 3.2 days in the group 2), canalization (respectively 5.98 days in group 1 and 5.13 days in group 2) early complications (9.2% in group 1 and 3.4% in group 2), 30 day postoperative mortality (3% in group 1 and 0% in group 2) and demission-time (9.1 days in the group 1 and 7.7 days in group 2). We observed not very differences in operative time (220.35 min in group 1 and 218.9 min in group 2) and ASA classification. We also noted in the older patients less nausea, vomiting and use of oral analgesic in the postoperatory.

Conclusion: Laparoscopic surgery has been proven to reduce hospitalization, cardiopulmonary stress, postoperative ileus, postoperative pain, and to improve immune and metabolic response offering particular advantages to older patients in terms to morbidity and mortality rates.

Our results are comparable to those just previously evaluated by Stewart et al. Bardram et al. Delgado et al, showing that laparoscopic approach, particularly in elderly patients, is a safe and highly standardized and now represent the gold standard for the colon cancer approach. In particular regard of age it seems to be an independent factor increasing postoperative mortality and morbidity.

A43
Anterior laparoscopic rectal resection for cancer in the elderly: long-term outcome, risk factors and health related quality of life
Massimo Vecchiato1, Silvia Savastano1, Giacomo Sarzo1, Roberto Cadrobbi1, Mario Gruppo1, Isabella Mondi1, Francesco Cavallin1, Giuseppe Bazzolo1, Elisa Marcellan1 and Stefano Merigliano1
1University of Padua, Department of Surgical and Gastroenterologic Sciences, 3rd General Surgery Clinic, Coloproctological Unit, “S. Antonio” Hospital, Italy
2Istituto Oncologico Veneto (IOVR-IRCSS), Padua, Italy

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Background: Elderly population in Western countries is rapidly increasing. Literature suggests that radical colorectal resection in the elderly can be safely undertaken with good short and long term results; however results of specific rectal laparoscopic resections are not well defined and so quality of life. The aim of this study was to assess long-term outcome; risk factors and health related quality of life (HRQoL) in elective rectal cancer laparoscopic resection in patients older than 65 years.

Materials and methods: Between March 2002 and November 2007, 57 patients underwent elective laparoscopic resection for rectal cancer. Of these 32 (56%) were 65 years of age or older; the remaining 25 were the control group. Perioperative and follow-up data were collected and stored in a database. We assessed: operative findings, histopathological features, postoperative course, follow-up and overall survival. All patients were assessed using the EORTC QLQ C30 and EORTC QLQC38 questionnaire to establish HRQoL.

Results: Laparoscopic resection for rectal cancer in the elderly is safe with no perioperative mortality and post-operative morbidity similar to younger patients (7% vs 13%; p = 0.4). The overall survival was lower in the younger patients (p = 0.0015; the 5-year overall survival rates were 69% vs 96.4%); but age older than 65 years was not an independent risk factor for overall survival at the multivariate analysis.

The multivariate analysis showed that neoadjuvant radiotherapy (p = 0.04) and metastatic nodes (p = 0.006) are independent risk factor for overall survival and vascular invasion (p = 0.005) for local recurrence. HRQoL was similar in the two groups.

Conclusion: Laparoscopic rectal resection for old patients is safe, with short-term results comparable to that of younger people. Old age is not an independent risk factor for prognosis. We achieved excellent overall long term survival and a good quality of life.

A44
Total parenteral nutrition in major surgery: role in geriatric age
E Zappulla, V Russo, I Gullotta, G Patanè, S Trovato, B Lucifora, S Costa, A Tracia, P Caglià and C Amodeo
Department of Surgical Sciences, Organ Transplantation and Advanced Technologies, Surgery Oncology Unit, University of Catania, Italy

BMC Geriatrics 2009, 9(Suppl 1):A44

Objectives: Many studies demonstrate that malnutrition in geriatric patient suitable for major surgery is an important risk factor for the onset of operating complications and for the increase of mortality range. The aim of this study is to value if an appropriate nutritional support allows a better metabolic recovery of the geriatric patient in order to decrease post-operating morbidity and mortality.

Materials and methods: A retrospective evaluation has been executed on 180 patients who underwent surgery because of neoplastic pathology – eighty-one of these patients aged 65 and over (65–88 range). Nutritional risks have been estimated by anthropometric (tricipital fold, circumference arm), bio-humoral (serum albumin levels, transferrin level) and immunological (lymphocytes/mm³) parameters.

Malnutrition indexes were: weight loss higher than 10% compared to usual weight; albumin level lower than 3 g; an iron-binding capacity lower than 220 mcg. The prognostic nutritional index (PNI) has been calculated too by Mullen. There was malnutrition in 69% of patients with neoplastic pathology; 67% of whom suffered from malignant neoplastic pathology of the gastroenteric apparatus. Within the group including undernourished patients, who were neoplasm carriers, the following rate per cent has been observed: 6.6% esophageal pathology; 14.4% gastric neoplasm; 33.3% colic neoplasm.

With regard to malnutrition patients were divided into three
groups: 19% of the patients had slight malnutrition; 61% had a moderate malnutrition and 20% had a serious malnutrition. All patients with average-high malnutrition, after the introduction of a central venous catheter, have been treated with total parenteral nutrition since the previous operation day for about 11 days in post-operating time (10–15 days range), until the restarting of feeding appropriate to metabolic requests.

**Results:** Malnutrition correction with total parenteral nutrition in elderly patients undergoing surgery for gastroenteric malignant neoplasm, allowed metabolic homeostasis by a control of the hyper catabolic state and the following attainment of nutritional recovery. All patients had a precocious canalization. Post-operating mortality was 0%. No major post-operating complications were observed. Only 4% of the patients had complications due to total parenteral nutrition (pneumothorax, catheter infections, hyperglycemia, hypophosphatemia).

**Conclusion:** Thanks to the modern discoveries in anaesthesia and in surgery, today more and more old patients can undergo major surgery for neoplastic pathology. However geriatric patients often have an average-high malnutrition level partly due to neoplastic cachexy and partly due to physiological deterioration caused by the age and concomitant pathologies too. The most important clinical manifestations of protein-caloric malnutrition are the decrease of immunity feedback, the increase of infections and the decrease of gastroenteric motility. The post-operating study of all patients is useful, in our opinion, in order to evaluate the malnutrition rate and to plan the best therapeutic treatment. Malnutrition correction will be effected through either enteral or parenteral way. Even if today malnutrition support of gastroenteric neoplasm is increasingly entrusted to enteral way, defined well-born, safe, effective and cheaper, in many cases parenteral nutrition turns out to be more rapid and easier to use because it does not require a long period of induction to reach a suitable calorific standard. So, overcoming malnutrition seems necessary, especially in geriatric patients who have to undergo major surgery, to decrease pre-operating complications, mortality and to warrant more rapid functional recovery.

**A45**

**Laparoscopic treatment of giant solitary hepatic cyst in a geriatric patient**

S Ricciardi, R Giansini, E Mion, P Mainente, S Faccin and L De Santis

U.O.A. Di Chirurgia Generale, Ospedale “San Lorenzo” Valdengo – VI, Italy

**BMC Geriatrics 2009, 9(Suppl 1):A45**

**Objective:** Solitary congenital liver cysts are a rare finding and present a challenge in the diagnosis. The role of laparoscopy surgery in the management of benign cysts is now the gold standard for treating selected, giant, accessible, symptomatic or complicated cysts. Our objective was to assess the feasibility, the safety and the efficacy of the minimally invasive technique procedure for treating giant hepatic cyst even in geriatric patient.

**Methods:** In support of the laparoscopic approach in the elderly, we here describe our minimally invasive technique in a patient with an isolated cystic mass located in the right lobe of the liver, in the anteroinferior (V–VI) and posteri osuperior (VI–VIII) segments (Figure 1). A 65-year-old woman reported progressive upper abdominal distension, and digestive complaints that are unexplained by other findings. Our case was initially diagnosed by ultrasound (solitary cyst, unilocular, spherical shape, smooth-walled, and absence of internal echoes, measuring 15 cm in diameter) and confirmed by CT scan and MRI, which also gave further information regarding the extent of the mass and its proximity to any vital structures within the liver. Serological tests for hydatid liver disease were negative and an upper gastrointestinal endoscopy was normal. Alkaline phosphatase and the total bilirubin level were mildly elevated. Thereafter the patient was scheduled for laparoscopic cyst excision. After trocar placement, similar to that for laparoscopic cholecystectomy, a small opening was made in the cyst and the contents aspirated for cytology and culture. Using a monopolar hooked cautery, the cyst was resected free from the liver surface, followed by an omentoplasty into the remaining cyst cavity (to prevent closing roof defect and cyst recurrence). The cyst was not in communication with biliary tree and not biliary leak has been reported. The procedure was completed laparoscopically without intraoperative complication and no need for blood transfusion. The operative time was 240 minutes.

**Results:** The cyst has been resected free from the liver surface without intraoperative complication and no need for blood transfusion. Histopathologic analysis demonstrated a true liver cyst (smooth cyst wall without calcification). Cyst serous fluid sent for CA testing was negative as a tumoral marker. In the early postoperative the patient developed a bilateral pleural effusion, treated successfully conservatively. The postoperative hospital stay was 12 days.

The patient is alive and free of symptoms during a follow-up of 12 months, without any signs of cyst recurrence.

**Discussion:** The precise frequency of liver cysts is difficult to estimate, because most do not cause symptoms and require no treatment. When cysts become large and cause symptom treatment is warranted. No medical therapy has proven curative. From technical point of view cyst may be treated by percutaneous aspiration under ultrasound or CT guidance in combination with sclerotherapy with alcohol or other agents.

![Figure 1 (abstract A45)](http://www.biomedcentral.com/1471-2318/9?issue=S1)
However the cyst fluid is continually secreted by the epithelial lining of the cyst and for this reason, needle aspiration of simple cyst is not curative and it may cause bleeding and the development of hepatic abscess do to contamination of the cavity that should become a problem difficult to resolve. Today, the general agreement is that laparoscopic unroofing of large simple cyst (the so called Lin procedure) offers the best balance between efficacy and safety. In our experience we preferred remove completely the wall of the cyst, to avoid cyst recurrence, by suppressing further fluid secretion. However, excision of the entire cyst wall is not necessary if is possible ablate the remaining epithelium with electrocautery or an argon beam coagulator. Surgical cyst fenestration can be done laparoscopically in elderly achieving at least similar results to those offered by an open approach, and is accompanied by the usual postoperative benefits of laparoscopic surgery.

**Conclusion:** Hepatic symptomatic giant cysts are suitable for the laparoscopic approach even in elderly patients. In selected patients total excision of the cyst is safe, associated with minimal morbidity and good long-term outcome and offers all the advantages of minimally invasive surgery.

**A46**

**Breast reconstruction in older women: a growing request**

Corrado Rispoli, Nicola Rocco, Loredana Iannone, Rita Compagna, Maria Teresa Cacciapuoti, Antonio Bellino and Bruno Amato

*Dipartimento di Chirurgia Generale, Geriatrica ed Endoscopia Diagnostica ed Operativa, University of Naples, Italy*

**BMC Geriatrics 2009, 9(Suppl 1):A46**

**Background:** As the population ages, the treatment of breast cancer among elderly women is becoming increasingly common. Decisions regarding breast reconstruction require not only considerations of patients’ age and comorbidities but also a need to balance life expectancy with quality of life. Although fewer women at all ages are undergoing mastectomy, for those elderly women who undergo mastectomy, reconstruction options should be offered. Over the past years, increasing numbers of elderly women are electing post-mastectomy reconstruction.

**Methods:** Experience with women undergoing mastectomy from 2000 to March 2008 was reviewed. Patient demographics, indication for surgery and decision regarding immediate reconstruction were collected using retrospective analysis of medical records, with attention to women over the age of 60.

**Results:** During this time period, 153 (27%) of patients with breast cancer were 60 years or older. Approximately, one third (49 patients) required or elected mastectomy as primary treatment. Of the 49 women evaluated, 17 (28%) elected delayed implant-based breast reconstruction. No patients experienced major complications at the longest follow up.

**Conclusion:** Elderly women undergoing with mastectomy should be offered breast reconstruction as part of their treatment. Physicians and patients need to be educated regarding surgical options, the minimal associated morbidity and mortality, and excellent functional and cosmetic outcomes. With extended life expectancy, breast reconstruction enhances these aspects of quality of life. Future management guidelines should include breast reconstruction in the algorithm.

**A47**

**Acute pancreatitis in the elderly: our experience**

Barbara Rossetti, Alessandro Spizzirri, Carla Migliaccio, Francesco La Mura, Lorenzo Cattorini, Stefano Trastulli, Roberto Cirocchi, Giammario Giustozzi and Francesco Sciannameo

*Department of General and Emergency Surgery, S Maria Hospital – University of Perugia, Terni, Italy*

**BMC Geriatrics 2009, 9(Suppl 1):A47**

**Introduction:** The aim of the trial is to evaluate etiology, clinical characteristics and treatment of acute pancreatitis in elderly patients.

**Materials and methods:** Since November 2003 to November 2008, 82 patients have been treated in the Department of General Surgery at S. Maria Hospital in Terni, Italy. We divided the patients into two groups, younger and older than 65 years old and we compared various parameters such as etiology, clinical characteristics, associated medical conditions and surgical or medical management in order to underline characteristic features in the elderly.

**Results and discussion:** Out of the 82 patients, 56% were men and 44% were females; 53.7% were >65 years old and 46.3% were younger. Biliary pancreatitis was the first common etiology in both groups, in fact the presence of gallstones represents the most frequent cause of acute pancreatitis. In the elderly patients, idiopathic pancreatitis was the second most common etiology whereas alcohol and hyperlipemia are less common causes than in the younger population. Clinical presentation of elderly patients can be atypical, often associated with an acute confusional state and it is frequently vague with no specific abdominal pain. Subsequently acute pancreatitis may have a rapid onset, characterized by upper abdominal pain irradiating to the back, vomiting, fever, tachycardia, leukocytosis and elevated serum level of pancreatic and hepatic enzymes. Elderly patients usually have higher Ranson scores and a greater degree of multi-system organ failure due to the presence of concomitant diseases.

The most frequent complications of AP seem to be lung injury and ARDS, followed by MODS. The principal treatment aspects of acute pancreatitis depend on its severity, changing between edematous and necrotic pancreatitis, and on the extent of pancreatic necrosis (ultrasonography and CT). It is moreover necessary an appropriate supportive treatment of MODS at an early stage of the disease by an aggressive fluid infusion, somatostatin, antibiotic prophilaxis. Only 14.6% of the elderly patients, (representing the percentage of complicated pancreatitis) underwent surgical treatment. We use to execute necrosectomy and cholecystectomy in order to resolve the local pancreatic complications such as pancreatic abscess and pseudocysts.

**Conclusion:** Biliary and unknown factors are main causes of AP in the aged patients. The management of the elderly with acute pancreatitis may be difficult due to concomitant medical problems. While local complications of AP occur largely in young patients, the incidence of multi system organ failure increases with age. It is crucial to monitor and improve the functions of major organs so in order to prevent MODS.
**A48**

**Sigmoid volvulus showing a “whirl sign” on computed tomography**

Paolo Rossi, Pietro Tasellari, Luca Mariotti, Evoli Luca Pio, Nidal Abu Qweider, Emanuela Elia, Patrizia Ricci, Saverio Valiani and Annibale Donini

*General and Emergency Surgery, Department of Surgery, S. Maria della Misericordia Hospital, University of Perugia, Perugia, Italy*


**Background:** Sigmoid volvulus is a rare condition. A high incidence has been reported in debilitated, or chronically constipated patients. It is important to recognize this condition early and then initiate prompt treatment. Endoscopic treatment has a high perforation risk. The “whirl sign”, was first described by Fisher, as suggesting volvulus of the small bowel, and it was considered that this sign represents the superior mesenteric artery at the centre surrounded by bowel loops. In a patient with sigmoid volvulus, the whirl sign is caused by tightly twisted bowel and mesentery.

**Materials and methods:** A 88-year-old man was admitted to our hospital with increasing colicky pain. Abdominal X-ray films (Figure 1) revealed gross dilatation of the colon and fluid levels. Abdominal computed tomography (CT) (Figure 2), revealed a dilated colon with air-fluid levels and the whirl sign, which represents twisted colon and mesentery. At the laparotomy a gangrenous sigmoid was found and a Hartmann’s procedure was performed. The patient was discharged in the VIII post-operative day.

**Conclusion:** Sigmoid volvulus is uncommon in Western Europe, it nevertheless constitutes the third cause of large bowel obstruction in adults. This condition is an abdominal emergency occurring more commonly in the elderly, sometimes with dementia or neuropsychiatric disorders, chronic constipation and a high-fiber diet. When abdominal X-ray films reveal gross colonic dilatation of unknown etiology, a “whirl sign” on CT scan raises the possibility of colonic volvulus. In the elderly prompt treatment of twisted colon, minimize morbidity and mortality.

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**A49**

**Treatment with radiofrequency thermoablation of elderly patients suffering from hepatocarcinoma (HCC)**

A Santoriello, R Benevento, S Lamberti, G Perna and S Canonico

*Department of General and Specialist Surgery, Second University of Naples, Italy*


**Background:** In elderly patients hepatocarcinoma is often not treatable by surgery in consequence of their reduced tolerance to liver resection for the concomitant cirrhosis, which frequently is the cause of death. In these patients radiofrequency thermoablation allows to obtain tumor necrosis with minimal sacrifice of liver parenchyma surrounding the tumor and satisfactory therapeutic results.

**Materials and methods:** From 2004 to 2008, 30 over 70 years aged patients suffering from ≤5 cm HCC were treated with radiofrequency thermoablation. All patients had a poor performance status for comorbidity and moderate or severe liver failure (CHILD B-C). They were treated under general anesthesia with 9 hooks RITA up to 105°C. We assessed percentage of induced tumor necrosis, time of intervention, complications, time of hospitalization, patient compliance, cost of procedures. All patients were submitted
monthly to clinical and ultrasound assessment to evaluate possible recurrence of disease. At 6 and 12 months, CT with and without contrast was carried out.

**Results:** The average follow-up was 16 months (range 8–42). The complete tumor necrosis was achieved in 25 patients, (in 19 cases with a single intervention and in 6 cases with two intervention). In the remaining 5 patients only a partial necrosis was obtained, and they were submitted to a second treatment. No serious complications (haemorrhage, hemoperitoneum, acute liver failure) were detected in the post-operative period. The average time of the procedure was 15 minutes (range 12–60). All patients were discharged the day after the treatment and expressed satisfaction about this technique. The total costs were less than surgical treatment (less time of hospitalization and less complications).

Of the 30 treated patients, 6 died for progression of cirrhosis; one patient treated with two interventions suffered after 5 months from hemoperitoneum for spontaneous rupture of the lesion and was treated with drugs. Ten patients received a further treatment after near one year, for appearance of new tumor nodules thirteen patients still do not show signs of cancer progression.

**Conclusion:** Radiofrequency thermoablation is a valid method for the treatment of HCC in elderly patients with high surgical risk, because is effective repeatable, with low incidence of peri and post-operative complications.

**A50**

**Liposarcoma of the esophagus: a case report**

M Pezzatini, G Nigri, S Valabrega, F D’Angelo, P Aurello and G Ramacciatio

*Department of Surgery, St. Andrea Hospital, II School of Medicine, University of Rome “La Sapienza”, Rome, Italy*

_BMC Geriatrics 2009, 9(Suppl 1):A50_

**Introduction:** Esophageal liposarcomas are extremely rare soft tissue tumors that account for only 1.2–1.5% of all gastro-intestinal liposarcomas. We report a case of liposarcoma of esophagus and the literature was reviewed.

**Case Report:** A 65-year-old man was admitted to our hospital complaining of progressive dysphagia and important weight loss occurred in the last 5 months. His past medical history was significant for distal gastrectomy for benign ulcer 20 years before and a cardiac pacemaker placement 4 years ago after a diagnosis of dilatative cardiomyopathy. Physical examination and laboratory tests resulted to be within normal limits. A barium swallow study demonstrated a contrast-filling defect of the cervical esophagus. The esophagogastroduodenoscopy showed a submucosal polypoid mass protruding into the entire esophagus and the biopsy of the lesion showed normal mucosa. The CT scan with a hydro soluble oral contrast showed a polypoid lesion of 5 cm in diameter and 21 cm in length occupying the entire esophageal lumen. Due to the patient’s status of malnutrition and the unknown nature of the lesion the esophagectomy was ruled out. It was performed a left side cervical approach with a right thoracotomy from which the mass was taken out. Histological examination showed a liposarcoma. The patient had an uneventful postoperative course and was discharged in after 12 days. The patient was disease free at 12- and 18-month endoscopic follow-up.

**Discussion:** Esophageal liposarcomas are very rare entities and the present case represents the 21st described in the literature to date. In the present case, neither barium swallow nor esophagogastroscopy were helpful diagnostic tools. Only CT scan with contrast swallow allowed to define the anatomic relationships of the mass with the esophageal wall. Almost all cases in the literature were approached by cervicotomy, but in 15 cases a second access such as a laparotomy or thoracolaparotomy was necessary to remove the tumor. Only 4 patients underwent esophagectomy (1–4). Unfortunately avoiding esophagectomy the risk of an R1 resection increases. Esophageal liposarcoma management remain vague and therapeutic options range from less invasive endoscopic excision to radical esophagectomy.

**A51**

**Effective application of Ligasure in laparoscopic splenectomy for splenic abscess in an old woman – case report**

Garancini Mattia, Luca Degrati, Cinzia Nobili, Francesca Bagnariol, Silvia Poli, Claudio Franciosi, Fabrizio Romano, Roberto Caprotti and Franco Uggeri

*1st Department of Surgery, San Gerardo Hospital, University of Milano-Bicocca, via Pergolesi 33, 20052 Monza, Italy*

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**Background:** Splenic abscess is a rare clinical condition with less than 600 cases described in the literature. Some reports suggest that splenic abscesses can be successfully managed with laparoscopic splenectomy. Nevertheless, no case of laparoscopic splenectomy with LigaSure employment has ever been illustrated for splenic abscess.

**Materials and methods:** We present the case of an 84-year-old woman, affected by essential thrombocythemia, monoclonal gammapathy and senile dementia, who was admitted in our Hospital for abdominal pain and high white blood cells levels. An abdominal CT scan showed splenic infarctual abscess and a broad-spectrum antibiotic therapy was arranged. Because of the unfavourable clinical evolution, a laparoscopic splenectomy was indicated.

**Results:** The laparoscopic intra-operative findings were splenic infarction, abscess in the lower part of the spleen and widespread inflammatory adhesions between spleen, greater omentum and parietal peritoneum. We performed laparoscopic splenectomy using Ligasure as device for dissection and vessels’ sealing. The estimated blood loss was 230 mL. The postoperative course was uneventful, no blood transfusion was needed and the patient was discharged on the 12th postoperative day. Histopathological examination confirmed infarction of the spleen and the presence of multiple abscesses.

**Conclusion:** Splenectomy for splenic abscess can be safely tackled by laparoscopy. In this setting, LigaSure can be used as an effective and striking tool to entirely perform the operation.

**A52**

**The role of CT in acute mesenteric ischemia**

Ioanna Galanou, Diego Milani, Claudia Conti, Eriberto Farinella, Micol Sole Di Patrizi, Stefano Trastulli, Roberto Cirocchi, Valerio Mecarelli, Giammario Giustozzi and Francesca Sciannameo

*Department of General and Emergency Surgery, Hospital S. Maria and University of Perugia, Terni, Italy*

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**Background:** Acute mesenteric ischemia is not a frequent abdominal emergency. The 90% mortality of this affection is related to a delayed diagnosis. Superior mesenteric artery
embolism is the most frequent cause of mesenteric ischemia. In this study we analyzed the diagnostic role of CT in this disease.

Materials and methods: From 1998 until 2007 32 patients (18 women, 14 men) with a mean age of 62 years underwent operation for primary intestinal ischemia at our institution. The medical and surgical records and imaging studies were reviewed retrospectively.

Results: Only 12 patients (37.5%) performed a preoperative diagnostic CT study, whereas in 20 cases (62.5%) the intestinal ischemia was diagnosed during surgical exploration. The acute mesenteric ischemia caused primarily by occlusive superior mesenteric artery in 26 cases (81.2%) and by venous thrombosis in 6 cases (18.7%). Most of the embolus are located approximately 3–10 cm from superior mesenteric artery emergence. An arterial embolus can be detected like filling defect or like an abrupt interruption of vascular enhancement. Frequently a secondary venous thrombosis follows the arterial occlusion. CT shows a moderate intestinal wall thickening and inclusions in air signs of intestinal gangrene. Only 19 (59.3%) of 32 patients survived the acute intestinal ischemia (in hospital mortality was 40.6%), delayed diagnosis and operation caused higher mortality. In 12 cases a preoperative diagnostic CT was performed the mortality was 32.5%.

Conclusion: According a difficult clinical diagnosis of acute mesenteric ischemia and the necessity of an early diagnosis we suggest to perform a CT at all patients with risk factors and acute abdominal pain for whom we have a clinical suspicious.

A53
Emergency abdominal surgery in the elderly: a ten-year experience
G Costa, G Nigrì, SM Tierno, F Tomassini, GM Varano and L Venturini
Department of Surgery, St. Andrea Hospital, Sapienza University of Rome, Italy

BMC Geriatrics 2009, 9(Suppl 1):A53

Introduction: The mean age of the population is increasing in the western countries. In particular, in Italy 14% of the population are over 70 years old. The rising of the older population is associated to the increase of the number of emergency abdominal surgical procedures. Postoperative morbidity and mortality are strictly dependent on comorbidities. The aim of this study was to analyze morbidity and mortality in older patients who underwent emergency abdominal surgery.

Materials and methods: We retrospectively analyzed a single surgeon’s (G.C.) 10-year experience. Between 1997 and 2008, 361 patients underwent emergency abdominal surgery. Trauma and rupture of the abdominal aorta were not included. The patients were divided in two groups. Group A included patients aging between 70–79 (258 pts) and group B included patients over 80 year-old. Univariate analysis was used to evaluate age, the interval between onset of symptoms and admission, the interval between admission and surgery, the diagnosis, the type of surgical procedure and the presence of comorbidities.

Results: The overall mortality was 21.6% (78 pts, 19.7% in group A and 26.2% in group B, p = ns). Morbidity was 38% (138 pts, 36.8% in group A and 40.7% in group B, p = ns).

Conclusion: The study shows that the age does not influence morbidity and mortality in older patients who underwent emergency abdominal surgery. Morbidity and mortality, instead, are strictly associated to the delay in diagnosis and to the presence of comorbidities.

A54
Prognostic factors of gastric cancer in the elderly
Raffaele Lanteri, Marco Santangelo, Maria D’Angelo, Santo Carnazzo, Antonio Di Cataldo and Antonio Licata
Dipartimento di Scienze Chirurgiche, Trapianti d’Organo e Tecnologie Avanzate, University of Catania, Italy

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Background: The aim of this study is to analyse if old age could be a prognostic factor and define what is the gold standard for elderly patients with gastric cancer.

Patients and methods: The definition of old age is still controversial. Traditionally the elderly population has been demographically defined as persons exceeding 65 years of age. Most authors divide patients age into young old (65–74 years old), older old (75–84 years old) and oldest old (85 and above).

In the Department of Surgical Science, Organ Transplantation and Advanced Technology from 1989 to 2002, 103 patients aged >70 years were observed for gastric cancer. Of these, 79 underwent potentially curative gastric resection. The surgical treatment was defined potentially curative in case of complete removal of disease with resection margin free of lesion. Macroscopic and microscopic classification of gastric cancer was assessed by applying the guidelines of Japanese Society for Gastric Cancer and W.H.O. and Lauren classification. The patients were divided in two groups: group 1: over 70 years old and group 2: less than 70 years old.

Hypertension, heart disease and malnutrition were found to be the most frequently comorbidities. In our series the most common localization of the cancer was in the lower third (43.7%). So we performed total gastrectomy in 45 patients (56.9%) and partial gastrectomy in 34 patients (42.1%). Perigastric lymphadenectomy was performed in 38 patients (48.6%) while D2 gastrectomy was performed in 41 patients (51.4%).

Twenty-three additional operative procedures were performed during gastric resection. Six patients had cholecystectomy for cholelithiasis, 16 patients had splenectomy for large greater curvature tumour and 2 for intraoperative iatrogenic lesion.

Results: Postoperative complications appeared in 5 patients and discharge of patients happened in 11 days after surgery (range 8–25). Thirty days mortality rate was 1.2% (1 patient). Five years survival in our patients was 37.9% (30/79 patients) which is similar to that reported in other series of younger patients.

Conclusion: In our study depth of invasion and nodal involvement demonstrated to be independent prognostic factors in gastric cancer while age could not be a contraindications for potentially curative resection of gastric cancer.

A55
Oesophageal stent in unresectable cancer in elderly
Raffaele Lanteri, Pietro Naso, Marco Santangelo, Maria D’Angelo, Antonio Di Cataldo and Antonio Licata
Dipartimento di Scienze Chirurgiche, Trapianti d’Organo e Tecnologie Avanzate – University of Catania, Italy

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Background: Oesophageal cancer is responsible for 10,000 cancer deaths in the United States and for 300,000 deaths in the world each year.
Aim of this study is to evaluate the displacement rate of EsophaCoil used in treatment of oesophageal cancer. In our department we prefer to use nitinol self-expanding stents (Esophacoil, Instent Inc., USA) for the radial force that allow complete and rapid expansion even in the presence of thigh stenoses, the rapid relief of dysphagia, adaptability of the spirals to the strictures with consequently greater adhesion to the neoplasia and lower percentage of dislocations, the lower percentage of tumoural ingrowth due to the serrated matching to the spirals.

**Patients and methods:** In our service from January 1995 to October 2002, 56 nitinol self-expanding stents (Esophacoil) were successfully placed endoscopically in 54 patients. Indication of endoscopic treatment was unreseetable oesophageal cancer in all patients except one. The other patient was affected by unreseetable carcinoma of the bronchus. Procedures for stent placement was: 1) Introduction of the endoscope (Olympus GIF 100, GIF N30) to ascertain the diameter and length of the stricture; 2) dilatation of tight stenoses using Savary-Gilliard-Bougies (15-21-30 F); 3) reintroduction of the endoscope to beyond the stenosis and positioning of guide wire at the antral level; 4) identification and marking with metallic strips on the skin, at the distal and proximal ends of the stenosis; 5) sliding the delivery catheter on the guide wire with the fluoroscopic localization of the stent in correspondence to the stenosis; 6) release of the retainers and removal of the catheter and the guide wire; 7) endoscopic check of expended stent.

**Results:** In our series the percentage of dislocation of stent is quite rare presenting only in four patients on 56 applications made. These data (7.14%) are comparable to those reported in literature (7.5%).

**Conclusion:** Self-expanding stents are the best choice in the treatment of unreseetable oesophageal cancer. EsophaCoil, has the advantage of opening spontaneously, doesn’t need probable multiple dilatation because its radial force allows complete and rapid expansion even in the presence of thigh stenoses with consequent rapid relief of dysphagia. It also presented an elevated adaptability of the spirals to the strictures with consequent greater adhesion to the tumour, a lower percentage of dislocations and a lower percentage of tumoural ingrowths due to the serrated matching to the spirals and an easy removal in case of migration or malposition.

**A56**

**Timing in surgical management of acute volvulus of the sigmoid colon in geriatric patients**

Stefano Trastulli, Micol Sole Di Patrizi, Francesco La Mura, Diego Milani, Joanna Galanou, Claudia Conti, Eriberto Farinella, Roberto Cirocchi, Giammario Giustozzi and Francesco Sciannameo

Department of General and Emergency Surgery, Hospital S. Maria, Terni, Italy – University of Perugia, Italy

**BMC Geriatrics 2009, 9(Suppl 1):A56**

**Background:** The aim of this trial is to evaluate the importance of an early diagnosis and of a correct surgical timing in geriatric patients with sigmoid volvulus.

**Materials and methods:** We performed a retrospective analysis of all the patients treated for sigmoid volvulus at the Department of General and Emergency Surgery, S. Maria Hospital in Terni of the University of Perugia, from January 1996 to March 2008. We treated 23 patients with sigmoid volvulus; mean age was 81 years. Eleven patients were admitted with a diagnosis of intestinal occlusion, 12 patients came to us from Medical divisions.

**Results:** The best prognostic results were for the group whose diagnosis of sigmoid volvulus was precocious and the surgical indication was precociously given. In those cases with difficult diagnosis due to an unclear symptoms or patient’s confounding factors or a negative abdominal plain film, the CT scan lead us towards a correct diagnosis. The abdominal CT was performed only in 3 cases (8%) and its specificity was 100%. Perioperative mortality was 38% in those patients treated without any sign of peritonism and 100% for patients with peritonitis.

**Discussion:** The clinical manifestation of a volvulus of the sigmoid colon is generally not clear at its onset and in a geriatric patient it can be even more confusing and the diagnosis can be achieved with difficulty. The instrumental exams (Abdominal plain film and CT) allow the identification of pathological signs in all cases of volvulus. The abdominal plain film shows the typical signs of mechanical ileus and the CT underlines the aspects related to the intestinal torsion.

**Conclusion:** The preoperative diagnosis of volvulus of the sigmoid colon can be quite difficult and it all can lead to a delay in the treatment. When the intervention is late the strangulation ileus will cause irreversible intestinal lesions. An early diagnosis is therefore fundamental and in geriatric patients who are often affected by more than one disease, the employment of a CT scan can be very useful.

**A57**

**Treatment of breast cancer in elderly patients**

E Zappulla, V Russo, I Gullotta, G Patanè, S Trovato, B Lucifora, S Costa, A Tracia, P Caglià and C Amodeo

Department of Surgical Sciences, Organ Transplantation and Advanced Technologies, Surgery Oncology Unit, University of Catania, Italy

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**Objectives:** The number of elderly patients with breast cancer is increasing. The purpose of this study was to evaluate the outcome of treatment of elderly women with breast cancer. We have explored the clinical and biologic characteristics of a group of patients aged 65 years and over affected with breast cancer. We have also identified specific subsets of elderly patients with breast cancer who have survival similar to that expected in the general population irrespective of disease status.

**Materials and methods:** We considered 155 patients aged 65 year and over, with an average of 74.1 year (range 65–87), treated at the Department of Surgical Sciences, Organ Transplantation and Advanced Technologies, Oncology Surgery Unit, University of Catania, Italy. The therapeutic outcome was established after the evaluation of the breast cancer’s stage,
According to the TNM classification. Thirty patients of the 155 belonged to the I stage, 40 to the II, 67 to the III and 18 to the IV stage. For T1 or T2 tumors we performed a quadrantectomy, followed by radiotherapy treatment on the residual breast tissue. For T3 tumors it has been performed a modified radical mastectomy, while in T4 we opted for a primary chemotherapy followed by a modified radical mastectomy for patients M0, or simple mastectomy for those M1.

**Results:** The most frequent histological aspect of breast cancer was lobular, tubular and mucinous cancer, as well as mixed ductal-lobular. The positivity for hormone receptors (ER) was 74% (111 patients). According to the pathological and biological features, and after oncological evaluation, patients underwent adjuvant chemotherapy (CMF, FEC) and/or hormonal therapy (tamoxifen). The average follow-up has been 50 months (range 12–78). We found a rebound of disease in 43 patients (28.6%), with a 17 months medium disease-free period. Ten local recurrences, in all patients who underwent quadrantectomy, have been detected. Three patients had local recurrence associated with lung metastases. No axillary recurrence has been found in patients who had axillary node dissection. The perioperative mortality was 0% and there was a 18.6% mortality in five years.

**Conclusion:** Standard treatment for breast cancer usually involves multi-modality treatment with a combination of surgery and adjuvant therapies. These may include chemotherapy, radiotherapy, endocrine therapy. The elderly receive less aggressive treatment for breast cancer compared with younger patients. Primary endocrine therapy is sometimes substituted for operation, and axillary surgery, adjuvant chemotherapy and adjuvant radiotherapy are commonly omitted. Although most breast cancer patients are diagnosed at >65 years, historically an arbitrary cut-off of 70 years has been widely used, above which women were considered for Tamoxifen-only treatment.

Older age is the most important risk factor for breast cancer, and because gains in life expectancy, particularly at the end of life, will result in more women being at risk for longer periods. Although available age-specific clinical trials data demonstrate that treatment efficacy is not modified by age, this efficacy evidence is limited by the lack of inclusion of substantial numbers of older women, particularly those of advanced age and those with comorbidities. Our preliminary work has demonstrated correlation between ER positivity and lower local recurrence (especially when treated with Tamoxifen) and improved breast cancer specific survival, and between high tumour grade and higher regional recurrence and poorer breast cancer specific survival. Further work is underway to correlate these features and other biological markers with long-term clinical outcome. Elderly patients tolerate surgery well. The risks from anesthesia and surgery may have been overestimated and the development of local anaesthetic techniques will help. Finally, there may also be underestimation of life expectancy in elderly women. A 70 year-old woman currently has a life expectancy of 16 years, at age 80, 9 years. Even at age 90, a few additional years can be expected. Age may have been used too rigidly to decide local treatment for elderly patients with breast cancer. Comprehensive multidisciplinary assessment is needed to make informed decisions and to optimize management of elderly patients. Breast cancer therapy should be defined by a woman's physiological age rather than chronological age.

**A58**

**Incidence and treatment of acute biliopancreatic diseases in the elderly patients: our experience in 130 cases**

SA Villari¹, F Fama¹, G Giacobbe², P Consolo², L Familiari² and MA Gioffrè Florio¹

¹Unità Operativa Complessa di Medicina e Chirurgia d’Accettazione e d’Urgenza (M.C.A.U) con Osservazione Breve, Policlinico Universitario di Messina, Italy

²Unità Operativa Semplice di Endoscopia Digestiva, Policlinico Universitario di Messina, Italy

**Background:** Acute biliopancreatic diseases occur commonly in the elderly patients, representing a surgical problem. By the age of 70 years, gallstone diseases (cholelithiasis, choledocholithiasis), inflammatory diseases and malignant biliary and pancreatic neoplasms, are the most common disorders of the biliary tree. Co-morbidity increases post-treatment mortality rate. In this epidemiological study, we evaluated incidence of these diseases and their treatment options, in the over seventy years old patients.

**Materials and methods:** Between January 2007 and December 2007, in the Emergency Unit, we observed 153 patients (age range 70 – 98 years) with acute biliopancreatic diseases. Out of these, 130 (61 males and 69 females; mean age 82.3) underwent medical treatment, radiological and endoscopic procedures, and surgery. Admission diagnosis were: 58 obstructive jaundice (44.6%), 37 acute pancreatitis (28.5%), 23 cholelithiasis (17.7%), 9 acute cholecystitis (6.9%) and 3 cholangitis (2.3%). Co-morbidity was found in 82%: chronic obstructive pulmonary diseases, ischemic heart disease, diabetes mellitus, hypertension and cerebrovascular accident.

**Results:** The final clinical diagnosis were: 74 (56.9%) gallbladder and choledocal lithiasis; 40 (30.8%) acute pancreatitis; 16 (12.3%) malignant neoplasm (8 pancreatic carcinoma, 5 cholangiocellular carcinoma, 2 gallbladder carcinoma and 1 duodenal carcinoma). Patients were approached: in 62 (47.7%) cases by an exclusive medical treatment, in 42 (32.3%) by an endoscopic retrograde cholangiopancreatography (ERCP); in 25 (19.2%) by surgical procedures (18 cholecystectomy, 3 gastrojejunal Anastomosis, 2 biliary digestive Anastomosis, 1 total pancreasectomy); in one (0.8%) case a percutaneous biliary drainage was placed. 24 patients underwent endoscopic sphincterotomy. Biliary stents were placed in 13 cases. ERCP was unsuccessful in one patient previously treated by Billroth II gastrectomy. Seven patients (5.4%) died for advanced malignancy (4 cases), sepsis (2) and acute myocardial infarction (1).

**Conclusion:** The incidence of acute pancreaticobiliary diseases in elderly increases with age. Appropriate and integrated medical and surgical treatment reduces mortality risk for lithiasic and flogistic diseases, in those high-risk groups. Mortality is related to malignant evolution (local or distant recurrence) and co-morbidity, for neoplasms. ERCP is accepted as safe, minimally invasive and effective technique for diagnosis and treatment of pancreaticobiliary diseases in the elderly.
A59 Hepatocellular carcinoma in the elderly
Alessandro Uzzau1, Anna Rossetto1, Floriana Carrer1, Blerta Elezi1, Daniele Pontello1, Vittorio Barucchello1, Erica Piccoli1, Roberta Molaro1, Enrico Benzon1, Giorgio Soardo2 and Dino De Anna1
1Department of General Surgery, Innovatory Program of Biotechnology, School of Medicine, University of Udine, Udine 33100, Italy
2Division of Internal Medicine, Department of Experimental and Clinical Pathology and Medicine, University of Udine, Udine 33100, Italy

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Aim of the study: Hepatocellular carcinoma (HCC) is the most common malignant liver disease, endemic in the third world because of its relation with HBV and HCV viral infection. Given the multiple etiologies of the disease, HCC trend of incidence is destined to grow in the future. HCC is often associated with cirrhosis, which is a limit to the surgery in relation to the functional state of the organ. It is more frequent after 60 years and is often diagnosed after age 70, in patients with multiple co-morbidity. This work will assess whether liver resection offers the same advantages in terms of survival in the elderly (over 70 years) than the younger population.

Materials and methods: We report our experience based on a series of 127 non-selected patients submitted to liver resection from September 1989 to January 2007. Patients were divided into two groups depending on age: Group 1 consists of 100 patients under 70 years old (mean age of 60.34 years), Group 2 consists of 27 patients over 70 years (mean age of 73.85 years). Frequencies and percentages have been adopted to summarize qualitative variables, while tools of descriptive statistics such as mean (± SD, standard deviation) and median was used for quantitative numerical variables. Survival was calculated using the Kaplan-Meier method, and differences were estimated by the Log-rank test. The Cox regression model was applied to determine independent variables that may influence survival. The multivariable analysis method was applied to analyze independent variables affecting survival and disease-free survival. Significant difference was defined as p < 0.05. The statistical analysis was conducted using the software for Windows SPSS 13.0 Evaluation Version (SPSS, Inc., Chicago, IL, USA).

Results: The two groups were compared by sex, etiology, underlying liver disease (HBV, HCV, alcohol, or multifactorial), presence or absence of cirrhosis (and Child-Pough functional status), grading, tumor size, number of lesions, absence of capsule, type of liver resection “minor” (= 2 segments) or “major” (≥3 segments), amount of blood transfusions, tumor markers, and complications. For none of these characteristics we found statistically significant differences except for higher values of alpha fetoprotein (AFP) in elderly patients (p = 0.04). In Group 1, 13 patients (13%) were submitted to right heptectomy, 6 (6%) to left heptectomy, 16 (16%) to bisegmentectomy, 30 (30%) to segmentectomy and 33 (33%) to wedge resection. In Group 2, 3 patients (11.5%) were referred to right heptectomy, 4 (15.4%) to left heptectomy, 2 (7.7%) to bisegmentectomy, 9 (34.6%) to segmentectomy and finally 41 (33%) to wedge resections. Post-operative mortality (within 30 days from surgery) was 5.5% (7 cases), 5 patients died in the first group (5.1%) and 2 in the second (7.4%) (ns). The rate of complications was 49.4% in 1st group and 40% in 2nd group (ns). The actuarial survival rate at 1, 3 and 5 years was respectively 73.6%, 42.0%, 25.0% in 1st group and 72.2%, 32.5% and 5% in 2nd group (ns). The disease-free survival at 1, 3 and 5 years was respectively 73.6%, 42.0%, 25.0% in 1st group and 72.2%, 32.5% and 5% in 2nd group (ns). The disease-free survival at 1, 3 and 5 years was 84.0%, 42.6% and 19% in 1st group and 37.5%, 18.8% and 0 in Group 2 (p = 0016, Figure 1).

Among the pathologic variables considered, diameter ≥5 cm had a negative impact only in the group of young patients (median survival of 48.4 vs. 36.4 months, p = 0.08). In the 1st group an AFP value >100 was predictive of poor outcome (median survival of 46.9 vs. 26.8 months, p = 0.006). The presence of 2 or more HCC had a negative but not significantly impact on survival in the group of elderly (median survival of 29.2 months and 24, p = 0.09). A volumetric index ≥40% was a negative prognostic factor in young patients (42, 9 vs. 22.9 months, p = 0.06). The rate of relapse among the two groups was found to overlap (27.6% in 1st and 26.9% in 2nd group).

Conclusion: Surgical treatment of HCC is feasible also in the elderly patient. The rate of complications and post-operative mortality are not significantly higher in elderly, although our data suggests that the long-term outcome is less favorable. For this reason selection of patients over 70 years would be more accurate to offer same results in terms of disease-free survival than expected in the young patients.

A60 Role of surgery in the treatment of liver metastases from colon-rectal cancer in the elderly
Alessandro Uzzau, Floriana Carrer, Blerta Elezi, Roberta Molaro, Daniele Pontello, Vittorio Barucchello and Dino De Anna
Department of General Surgery, Innovatory Program of Biotechnology, School of Medicine, University of Udine, Udine 33100, Italy

BMC Geriatrics 2009, 9(Suppl 1):A60

Aim of the study: Liver metastases from carcinoma of the colon-rectum (CCR) develop in about 50% of patients under-
going resection of primary tumor and about 15–25% of patients had synchronous metastases at presentation. In the absence of surgical treatment, survival 1 year after diagnosis is 30% and is less than 5% at 5 years. The 5-year survival after resection varies from 20 to 54%, while the value of post-operative mortality is currently less than 5%. Resection should be considered for all patients with disease confined to the liver where there is a real possibility of radical resection and maintaining a proper liver function. Currently, the average age of patients undergoing resection is over 60 years. At the same time we are witnessing an expansion of that surgery in patients older than 70 years. This retrospective work is to evaluate whether age may be a limit to liver surgery, and which clinical-pathological factors are predictive of outcome in the medium to long term.

**Materials and methods:** 140 patients resected for liver metastases from CCCR between 1990 and 2007. For statistical purposes, the series was divided into two groups according to age: Group 1 ≥70 years (36/140), group 2 <70 years (104/140). Survival was calculated by the Kaplan-Meier method, differences between variables were estimated by the Log-rank test. Multivariate analysis was applied to analyze independent factors affecting survival. Data processing was performed using SPSS 13.0 for Windows Evaluation Version (SPSS Inc., Chicago, IL, USA).

**Results:** The average age of the whole series was of 61.4 years. Overall, there were 158 major procedures, 12 of which were repeated resections. Metastases were synchronous in 60 cases: 18 patients (50%) of group 1 and 42 (40.4%) in the 2nd group. Co-morbidity occurred in 37 cases: 16 (11.4%) over 70 years and 27 (19.2%) under 70 years (p < 0.03). The ASA classification was similar in both groups. The duration of follow-up was 31.92 ± 29.6 months (range: 25–141 months) in the first group and 41.21 ± 45.43 (range: 6–72 months) in the group younger than 70 years.

Type of liver resection, survival and complications: a total of 11 major resection (30.5%) and 25 minor procedures (69.4%) were performed in the first group, and 32 major (29.1%) and 78 minor resections (70.9%) in the second group. Wedge resections was most performed in both groups (30.5% over 70 vs. 35.5% under 70). Peri-operative mortality of the entire series was 1.4% (2 cases both in group 2). The rate of complications was 30.5% in group I and 23.1% in group 2 (NS). Long term survival and relapse: liver relapse accounted for 61% of patients in the 1st group (22/36), and 55.8% of the second group (58/104). In one case of the second group (0.96%) relapse involved the lung. Atrual survival at 1, 3 and 5 years was 68%, 43%, 23.5% for group 1 and respectively 90.6%, 56% and 36.9% for group 2 (p = 0.03). Multivariate analysis showed as negative predictive factors: type of resections (major resection), hepatic lymph node involvement, of metastases >to 5, and diameter of the lesion ≥5 cm.

**Conclusion:** In this series long term survival was better for young patients. Peri-operative mortality was 2 cases (1.9%) in the 2nd group, and 0 in patients older than 70 years. Most patients had post-operative course without significant morbidity and the rate of complications was similar in both groups. In conclusion age is not a prognostic factor influencing the outcome in the medium term and thus is not a contraindication to resection for liver metastases.

**A61**

**Mesenteric infarction**

Francesca Toni, Gregorio Patrizi and Adriano Redler

*Dipartimento di Scienze Chirurgiche, “Sapienza” Università di Roma, Policlinico Umberto I, Roma, 00161, Italy*

**BMC Geriatrics** 2009, 9(Suppl 1):A61

**Aim:** Mesenteric infarction is a necrosis of the intestinal wall due to a sudden reduction of the blood supply. The different aspects of intestinal ischemia will be reviewed after the presentation of three emblematic cases led to our attention.

**Materials and methods:** A 70 years old man was admitted to our department for the onset of epigastric pain. The CT scan showed a thrombosis of the superior and inferior mesenteric veins and of the right branch of the portal vein with some branches for the segments VIII, VII, IV, and VI also involved. The patient started anticoagulant therapy with intravenous sodic heparin and then switched to oral anticoagulants. Further investigations proved a heterozygosis G20210A for mutated prothrombin.

We report the case of a 63 years-old woman, with tracheostomy, gastrostomy and ciecostomy after a long recovery in intensive care unit. She was admitted for the onset of diffuse abdominal pain, with nausea, emesis and stipsis (despite of the ciecostomy). The clinical conditions worsened and she underwent laparotomic exploration in emergency. The occlusion was due to a volvulus of the small bowel and the necrosis was extended from the III jejunal loop to the last ileal loop. A latero-lateral ileo-transversostomy was then performed.

A 56 years-old man with a story of hypertension, chronic renal failure and consequent dialysis and parathyroidectomy for secondary hyperparathyroidism was admitted in our Department for the onset of recurrent diffuse abdominal pain during the dialytic treatment, displaying intestinal subocclusive crisis. The abdominal x-ray film showed severe calcifications of the aortic and visceral vessels walls. The color-Doppler of the digestive arteries showed a severe stenosis of the origin of the superior mesenteric artery (VPS 360 cm/sec). A transfemoral stenting of the stenosis of the superior mesenteric artery was then performed successfully.

**Results:** Without radiologic or clinical evidence of transmural infarction of the bowel, the therapy for venous intestinal ischemia is conservative and based on anticoagulant medical therapy and this pathology arises frequently in a setting of unknown thrombophilia. We believe surgical thrombectomy is mandatory and wide resections are frequent. The third case shows an acute and reversible mesenteric syndrome, presumably due to a theft syndrome with the onset of abdominal pain during dialysis, solved with a minimally invasive procedure instead of surgical revascularization. This procedure on such patients is even harder for the extent of the abdominal arterial calcifications.

**Conclusion:** The variable etiology of the intestinal ischaemia is well related to the different therapeutic approaches (medical,
surgical or endovascular). The situation of the intestinal walls can range from a suffering intestinal loop that requires revascularization to a definitive necrotic tract of bowel for which a resection becomes mandatory. Endovascular techniques seem to provide an efficient alternative to traditional surgery, especially for chronic or acute mesenteric ischemia when there is no evidence of infarction or necrosis.

A62
Surgical risk and technical notes of laparoscopic anterior resection in the elderly: lessons from an early experience
Giovanni D Tebala¹, Ida Camperchioli², Paolo Innocenti¹, Nicola Di Lorenzo², Pierpaolo Sileri² and Achille L Gaspari²
¹Digestive Surgery Unit, Department of Surgery, Aurelia Hospital, Rome 0039, Italy
²Department of Surgery, Policlinico Tor Vergata, Rome 0039, Italy
BMC Geriatrics 2009, 9(Suppl 1):A62

Background: The many advantages and the few limits of laparoscopic surgery have already been demonstrated, but its role in colorectal surgical oncology are all but cleared. However, recent series show that short- and long-term results are the same of traditional surgery. Some concern still remains on the safety of laparoscopic oncologic surgery in aged patients with their expected comorbidity. But elderly patients are those in whom a mini-invasive approach could be most beneficial.

Materials and methods: We retrospectively evaluated our initial experience with aged patients who underwent laparoscopic anterior rectal resection, trying to answer to the following questions: what is the surgical risk? What are the technical and anesthetic problems? Seventeen patients aged ≥ 65 years underwent surgical treatment for sigmoid or rectal cancer up to T2 (11 pts), chronic diverticular disease with substenosis (5 pts), benign disease not amenable to endoscopic treatment (1 pt). Contra-indications were: ischemic heart disease, severe anemia, chronic respiratory distress and coagulopathy. Our technique entails the routine mobilization of the splenic flexure, the section of the peritoneal pelvic reflexion and the execution of a colorectal anastomosis well below the peritoneal pelvic reflexion, paying attention to the good vascularization and the total absence of tension.

Results: From the presented series we excluded the first “learning” cases in which the operation was always converted after an early laparoscopic phase. Fourteen operations were completed by laparoscopy. Conversion was necessary due to intraoperative bleeding (1 pt) and impossibility to manipulate and mobilize the rectum (2 pts, a bulging rectal cancer and a huge diverticular mass). Mean operative time was 186 ± 29 minutes. The patient is mobilized in postoperative day (p.o.d.) 1; bowel movements are present up to p.o.d. 2 and oral intake is started on p.o.d. 5. No severe complications were registered but an incisional hernia on a McBurney minilaparotomy, which was treated by laparoscopy 3 months later.

Conclusion: This initial experience allows us to guess that laparoscopic approach is a safe and efficient technique also in the elderly, if attention is paid to patient selection and if the classical surgical rules are followed. In our opinion, it’s extremely important that the technique is someway standardized and the usual manoeuvres are always repeated independently of the disease and the anatomy.

A63
Radical surgical treatment of duodeno-pancreatic neoplasms in elderly patients: our experience
A Oldani, F Butera and M Garavoglia
Clinica Chirurgica, Università del Piemonte Orientale “A. Avogadro”, Azienda Ospedaliera “Maggiore della Carità”, Novara, Italy
BMC Geriatrics 2009, 9(Suppl 1):A63

Aim of the study: To evaluate the results of surgical treatment of duodenopancreatic neoplasms in elderly patients, in terms of mortality, morbidity and survival.

Materials and methods: From 01/01/1994 to 01/10/2008 48 patients aged more than 65 years old, 29 males (60.42%), 19 females (39.58%) mean age 67 years old (range 65–81), underwent radical surgery for duodeno-pancreatic neoplasms. 24 patients (50.00%) were affected by pancreatic head carcinoma, 5 (10.42%) by distal common bile duct cancer, 11 (22.92%) by ampullary cancer, 4 (8.32%) by duodenal carcinoma, 1 (2.08%) by infiltrating right colon carcinoma, 2 (4.16%) by distal pancreatic cancer, 1 by focal pancreatitis.

Results: 44 patients (91.67%) underwent pancreaticoduodenectomy (37 standard, 7 extended, with Wirsung gastric anastomosis in 19 cases, Wirsung-jejunal anastomosis in 34, and Wirsung closure in 1); 3 patients (6.25%) underwent total pancreateicoduodenectomy, 1 patient distal pancreatectomy. 2 patients were also treated with IORT. Perioperative mortality was 4.16%, morbidity was 10.42% (2 cases of peritoneal bleeding, 3 gastrointestinal bleeding, 2 portal thrombosis, 1 pancreatic fistula). 3 years survivorship was 22% (N0:18%, N1:2%); 5 years survivorship was 16% (N0:14%, N1:2%). Causes of death were liver metastasis (29.17%), local recurrence (10.42%), cardiovascular and cerebrovascular events (4.16%).

Conclusion: Radical surgery for duodeno-pancreatic tumors could be a good option in elderly patients; despite comorbidities, in our experience we observed good results in terms of survival and morbidity, similar to what observed in younger patients.

A64
Colo-rectal cancer (CRC) in elderly patient: anagraphical age as not a determinant key for a radical surgery
Adolfo Petrina, Luigi Finocchi, Carla Cini, Marco Badolato, Carlo Boselli, Fabio Rondelli and Giuseppe Noya
Division of General and Oncological Surgery, University of Perugia, Italy
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Purpose: To determine whether the biological age of the patient and ASA score are discriminatory for a radical surgical approach in colo-rectal cancer.
Materials and methods: Monocentric and mono-surgeon case record about 135 patients undergoing surgery for CRC between June 2004 and April 2008. Patients were divided into two groups (see Table 1):

(A: <70 years, n = 44, 27 and α = ϕ = 17; B: >= 70 years, n = 91, α and ϕ = 49 = 42) comparing clinical, surgical and pathological data.

We examined and compared range of age and average age, ASA score, the average time of hospitalization, the post-operative complications (major and minor), mortality at 30 days and during the follow-up (in progress).

Results: The average age of group A is 59.6 years (range 41–69); for Group B it is 78.6 years (range 70–96).

Oncological radicality was achieved in 41 (93%) and 76 (83%) patients respectively in groups A and B;

ASA score was distributed in this way in Group A: I = 2, II = 40, III = 2 and IV = 1, so in Group B: I = 1, II = 23, III and IV = 54 = 13.

The average time of hospitalization was of 11.7 days (range 4–24 days) in Group A and 10.16 days (range 1–29 days) in Group B. The post-operative complications were divided into major (4 in group A - 9.1%, 10 in group B - 10.9%) and minor (2 in group A - 4.5%, 7 in group B - 7.6%).

Group A: major: acute myocardial infarction (AMI) (ASA IV), small-bowel obstruction (SBO) (ASA II), hemoperitoneum (ASA I), fistula (ASA III) minor: uroseptic fever (ASA I and ASA II).

Group B: major: AMI (ASA III–IV), SBO (ASA II), hemoperitoneum (ASA II–IV), fistula (ASA II–III) pulmonary embolism (PE) (ASA III), transient ischemic attack (TIA) (ASA III), Acute renal failure (ARF) IR (ASA IV) minor: wound infections (3 ASA III, 2 ASA IV).

Pulmonary densification (ASA III–IV).

The mortality during the first 30 days after surgery was of 1 patient (2.3%) in group A, and 4 patients (4.3%) in group B:

Group A: ASA III, Dukes D, right hemicolecotony in patient with bowel obstruction (cachexia).


ASA IV Dukes C2, colostomy in sigma obstructing cancer (cachexia).

ASA IV Dukes D, cecostomy in left obstructing colon cancer (cachexia).

ASA IV Dukes D, sigma resection (AMI).

Table 1 (abstract A64)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right hemicolecotony</td>
<td>11</td>
<td>39</td>
</tr>
<tr>
<td>Resection of transverse colon</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Left hemicolecotony</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Sigma resection</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Anterior resection of the rectum</td>
<td>16/2 ileostomies</td>
<td>16/4 ileostomies</td>
</tr>
<tr>
<td>Colostomy</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Hartmann resection</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Total colectomy</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Exploratory laparotomy</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Synchronous right hepatectomy</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Synchronous hepatic resection</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

Conclusion: Not age, but the physical condition (ASA score) and the patient's biological age, meaning co-morbidity, are the factors conditioning the choice of a surgical approach with radical intent. The stage of the disease significantly influence survival rates.

A65

Elderly and colorectal surgery. Analysis of surgical site infections

Silvia Poli, Luca Degrate, Cinzia Nobili, Mattia Garancini, Francesca Bagnariol, Fabrizio Romano, Claudio Franciosi, Roberto Caprotti and Franco Uggeri

Department of Surgery, San Gerardo Hospital, University of Milano-Bicocca, via Pergolesi 33, 20052 Monza, Italy

BMC Geriatrics 2009, 9(Suppl 1):A65

Background: Surgical site infection (SSI) is the most common hospital-acquired infection among surgical patients. This complication prolongs hospital stay, increases morbidity and occasionally leads to mortality.

The aim of our study is to compare incidence and characteristics of SSIs between young (under 70 years) and old (over 70 years) patients undergoing surgical colorectal resection.

Materials and methods: From November 2005 to July 2008 we prospectively collected data from patients who underwent colorectal resection. The study group comprised 264 patients, divided in two groups according to age under 70 (group A) or over 70 years (group B). We analyzed comorbidities and ASA score; type of surgical procedure and diagnosis; surgical contamination wound class, incidence of SSIs and their characteristics.

Results: Group A is composed by 144 patients (80 male and 64 female, mean age 58.3 ± 9.1 years) and group B by 120 patients (63 male, 57 female, mean age 77.9 ± 5.3 years). The two groups are comparable in term of surgical procedure, diagnosis, indication for urgent operation, surgical contamination wound class and patient BMI. Group B differ from Group A for higher ASA score, greater number of comorbidities, longer hospital stay and greater number of ostomies creation (p < 0.05).

We didn’t find out any statistically significant difference between the two groups in SSI incidence (11% in A vs 16% in B), postoperative day of SSI diagnosis (6.8 ± 2.7 day in A vs 7.6 ± 3.7 day in B), SSI depth (12 superficial and 4 deep in A vs 13 superficial and 7 deep in B) and SSI time length (16 ± 13 days in A vs 17 ± 8 days in B).

There is no statistical difference between young and old patients about incidence of SSI considering colon or rectal surgery (Right colon: 5.7% in A vs 10.4% in B; Left colon: 13.1% in A vs 26.1% in B; Rectal: 16.1% in A vs 13.3% in B).

Conclusion: Our study shows that even if the two groups differs in ASA score, number of comorbidities, hospital stay and creation of ostomy, there is not a significant difference in incidence and characteristics of SSI: as literature shows, age shouldn’t be considered as a risk factor for SSIs.

A thought-provoking result is that even if we consider the site of surgery (right vs left colon vs rectum), there is not a significant difference in SSI incidence.
A66

Gastric cancer in elderly: clinico-pathological features and surgical treatment

F Guida, A Antonino, P Conte, G Formisano, D Esposito, M Bencivenga, G Aprea, B Amato, U Avallone and G Persico

Department of General, Geriatric and Oncologic Surgery and Advanced Technologies-University of Naples “Federico II”, Italy

BMC Geriatrics 2009, 9(Suppl 1):A66

Aim of the study: In the last decade, medical progress has prolonged the average age of human life. For this reason the surgical treatment of elderly patients with gastric cancer is becoming more frequent. The aim of this study was to analyze clinical and pathological features of gastric carcinoma in patients 70 and older with particular attention to the surgical treatment.

Materials and methods: All patients who received a gastrectomy for adenocarcinoma in our surgical department since January 1998 to December 2002 were admitted to the study. Inclusion criteria were: a) Curative resection (R0); b) no metastases before surgery; c) no other primitive neoplasms; d) consensus of the patient for a follow-up of 5 years. Patients were divided into two groups for age: cut-off has been considered for 70 years old.

Results: 57 patients were admitted to the study: 41 were <70 years (range 37–70) and 16 patients were older (range 70–86). In the group of patients ≥70 years old gastric cancer was more frequent in male patients with a M/F ratio of 2.2 versus 1.05 in the younger group.

Some other important differences were observed in the gastric distribution of the neoplasia: <70 years old group there was a prevalent localization at the corpus (46.3% vs 18.7%); ≥70 years old group there was a greater prevalence of antral localizations (62.6% vs 39.1%). This pattern of distribution can explain the different surgical approach: in fact <70 years old group there was a greater number of total gastrectomies (63.4% vs 38%); instead in the ≥70 years old group there was a greater number of subtotal gastrectomies (62% vs 36.6%).

In older patient after total gastrectomy has been usually confectioned an omega anastomosis between esophagus and jejunum for the reduction of surgical and anesthesiological time. The group of patients aged 70 and older presented more comorbidities (81% vs 58.5%), but tumor-related deaths in the two groups were similar (61% vs 62%).

In the ≥70 years old group there was a greater incidence of diffuse gastric cancer (44.8% vs 34.2%) with a greater neoplastic recurrence in this group (56.2% vs 44%). Different is also the recurrence pattern: <70 years old group there were more frequent locoregional recurrences (27% vs 12.5%); ≥70 years old group there was a greater incidence of peritoneal (25% vs 2%) and hematogenous (18.7% vs 15%) recurrence.

No differences between the two groups were noted about the preoperative stadiation, but in the ≥70 years old group there is a lower incidence of stage I (12.5% vs 21.6%) neoplasms. Elsewhere no differences between the two groups were noted about the endoscopic Borrnann type.

Conclusion: Gastric cancer presents evident clinico-pathological differences in the patient aged 70 and older: higher M/F ratio, more frequent antral localization and greater incidence of peritoneal and hematogenous recurrence. In addition, older patients often present more comorbidities and more pharmacological therapies.

This is the reason why surgical approach should be modulated on the basis of the individual risk: age is not a contraindication for curative surgery as in our study tumor-related death is not different between the two groups. In addition, older patients usually have a reduced functional reserve, so a subtotal gastrectomy often results the best surgical approach for the greater incidence of antral tumors and the better quality of life for the presence of part of the stomach.

A67

Perforation of colonic cancer in old patients

Domenico Spoletini, Fabio Giorgiano, Aldo Nunziale, Saverio Coiro, Elena Manna, Francesca De Lucia and Giuseppe Pappalardo

Department of General Surgery, Surgical Specialities and Organ Transplantation “P. Stefanini”, “Umberto I” Hospital. “Sapienza” University of Rome, Italy

BMC Geriatrics 2009, 9(Suppl 1):A67

Background: Perforation is the second most frequent complication of colonic cancer (c.c.). It represents 0.8%–3.7% of all c.c. surgically treated and 10%–26% of those operated on in emergency. The resection rate of c.c. perforations is increased in the last decade reaching 95% or more. Hinchey classification, Mannheim Peritonitis Index (MPI) (5) and Acute Physiology and Chronic Health Evaluation (Apache II) are employed to evaluate the severity of peritonitis and the performance status of the patients.

Materials and methods: Between 1980 and 2007 we treated 924 c.c.: 842 in elective surgery and 82 in emergency; of these, 23 (2.5%) patients had c.c. perforation. Among these 17 (73.9%) were more than 65 years old (average: 75 yrs; range: 65–86 yrs); 9 were females and 8 were males. The perforation was at the level of the neoplasm in 14 (82.3%) patients (9 cecum, 1 transverse colon, 4 sigmoid colon). In two patients (11.8%) the perforation was in the cecum and the cancer was in the left colon. One patient (5.9%) had a perforation of a cecal cancer with a synchronous stenosing neoplasm in the sigmoid colon. Three patients (17.6%) were classified as Hinchey I, 6 as Hinchey II (35.4%), 5 (29.6%) as Hinchey III and 3 (17.6%) as Hinchey IV. MPI was between 22 and 29 in 9 patients (52.9%) and more than 29 in 8 patients (47.1%). Apache II was equal or less than 30 in 15 patients (88.2%) and more than 30 in 2 patients (11.8%). We performed 15 (88.2%) resections with anastomosis, protected by a derivative stoma in 11 (73.3%). Two patients (11.8%) had a Hartmann procedure.

Results: The pathologic examinations showed 5 (29.4%) Dukes B, 8 (47.1%) Dukes C and 4 (23.5%) Dukes D. Neoplastic cells were present in peritoneal liquid in 13 (76.4%). Four (23.5%) patients died in the post-operative period. Fourteen (82.3%) patients had severe post-operative complications. We had only one (6.6%) anastomotic leak cured conservatively.

Conclusion: Perforation of c.c. is a rare but severe complication. All patients can be treated by a resection; in most of them an anastomosis can be performed, protected by a stoma in advanced Hinchey stages and high MPI and Apache II. The mortality and morbidity rates remain high.
**A68**

**Multimodal approach to liver neoplasm in elderly patients. A single center experience**

D Iacovetta, C Cellini, F Selvaggi, ES Kechoud, M Legnini, F Francomano and P Innocenti.

1. Istituto di Patologia Chirurgica, policlinico universitario “SS. Annunziata”, Chieti, Italy
2. Scuola di specializzazione in chirurgia generale università degli studi “G. d’Annunzio”, Chieti, Italy

**BMC Geriatrics 2009, 9(Suppl 1):** A68

**Introduction:** Surgical therapy remains the gold standard for treatment of liver neoplasms. In the last 20 years we assisted to an increase of survival in patients with a diagnosis of hepatocellular carcinoma (HCC), according to screening programs, and a multimodal therapeutic approach. In the last years it was an increase of elderly patients with HCC cause of the increase of infection of HCV and an increase of geriatric patients; together with HCC, hepatic metastases represent the main topics of our investigation.

Is justified an aggressive approach to liver neoplasms in the elderly? Recent studies show as elderly is not a contraindication to major hepatic surgery. The aim of this study is to evaluate the effective advantage of multimodal approach to hepatic surgery in elderly population (70 years old and older).

**Materials and methods:** Between January 2001 and September 2008 a total of 150 patients with hepatic lesions (hepatocellular carcinoma – HCC, liver metastases and tumor of biliary tract) we admitted in our department to undergo to multimodal treatments. Fifty-three (53) of them were 70 years old or older (female to male ratio = 12:41. Mean age: 74.9 years median: 75.0 years. Max value: 87 years).

Preoperative examinations include abdominal ultrasounds, abdominal TC scan, RMN when rescued and AFP, CA 19-9 levels. We considered patients 70 years of age, post-operative complications, diagnosis, extension of resection (major resection, minor resection, resection of nodules), overall and disease free survival at 48 months. Categorical variable were analyzed by chi-squared test; survival was calculated using Kaplan Meyer method and compared with log-rank test. Differences were considered to be statistically significant when \( p < 0.05 \).

Liver resection was considered treatment of first line. We routinely effectuated IOUS (anatomical resection \( \Rightarrow \) non anatomical). Median follow up was 48 months.

**Results:** There were 12 female and 41 male patients with a median age of 75 years. Of them 21 were treated for liver metastases, 26 for HCC, 6 for tumors of biliary tract. The 19% underwent to major resection, 60% to minor resection and 21% resection of nodules.

Post-operative complications occur in older patients as in younger. The incidence of post-operative complications is similar between the groups of patients (test del \( \chi^2 \) not statistically significant).

There is not difference in overall survival and disease-free survival between patients with 70 years old and older and younger patients (\( p: \text{n.s.} \) log-rank test).

**Discussion:** The safety of hepatic resection in elderly patients is still debated.

Any studies concluded that hepatic resection can be safely performed in patient 70 years old or older. Other study confirmed that an aggressive surgical approach for colorectal metastases is justified. In other series Figueras et al. have suggested that elderly patients, undergoing liver resection, have higher post-operative morbidity and mortality rates.

The only absolute contraindication to hepatic resection is the impossibility to performed curative resection. The presence of bilobar metastases, extrahepatic metastases, recurrence of colon cancer, limited carcinomatosis are not absolute contraindications for hepatic resection but only a bad prognostic factors such the resection margin.

Multimodal treatments (systemic and local chemotherapy, chemioembolization, termoablation) performed during, before or after surgery have a role in the in curative and palliative treatment. In our series geriatric patients received the same treatment and the same algorithm than in the younger patients.

The results in term of post-operative complication, 48 months overall survival (HCC 79.4%, MTS 26.4%, biliary tract 20.0%) and disease free survival (HCC 73.3%, MTS 26.4%, biliary tract 20.0%) show as multimodal treatments can be performed with safety in patients 70 years old and older.

Treatment of elderly patients, in term of optimizing their surgical outcomes, is one of the most important challenge for the “future surgery”.

**A69**

**Epidemiology and outcome of multiple trauma in the elderly population in a tertiary care hospital in southern Italy**

M Iaria, S Surlenti, F Famá, SA Villari and M Gioffré-Florio.

UOC of Medicine and Surgery, University AOU Hospital, Messina, Italy

**BMC Geriatrics 2009, 9(Suppl 1):** A69

**Background:** It is estimated that, in Italy, by 2050 almost 35% of the population will be older than 65 years and 14% will be older than 80 years. As the elderly population grows, the fraction of geriatric trauma patients seen in trauma centers is rapidly increasing. Traumatic injuries in the elderly often represent a major medical and surgical challenge. Even a condition as simple as an isolated fracture can be life threatening in the geriatric population. Aim of the study is to identify incidence and pattern of distribution of injuries in the geriatric trauma patients, as well as short-term prognosis.

**Methods:** We performed a retrospective descriptive analysis of data collected from our trauma database on traumatic injuries occurring between January 1, 2007 and December 31, 2007. The study cohort was selected both on the basis of complexity of trauma and age. Geriatric trauma victims \( \geq 70 \) years old or two or more different body areas affected were included. Demographics, pattern of distribution of multiple injuries and outcome of the elderly trauma patients were analyzed.

**Results:** A total of 899 geriatric trauma patients \( \geq 70 \) years old were evaluated in the emergency department of the tertiary care University Hospital of Messina, throughout 2007. We identified a smaller cohort of 87 patients out of 899 who met the criteria for the study.

Age range was 70 to 97 years, with an average of 82.1 years. There were 42 male and 45 female patients.

The vast majority of the geriatric trauma cohort (24.3%) suffered head injury along with blunt chest trauma (28 pts), 8.7% of
A70
Acute appendicitis in the geriatric patient
Francesco La Mura, Maria Sol Di Patrizi, Eriberto Farinella, Carla Migliaccio, Pamela Del Monaco, Barbara Rossetti, Roberto Cirocchi, Giammario Giustozzi and Francesco Sciannameo
Department of General and Emergency Surgery, S. Maria Hospital, Terni-University of Perugia, Italy
BMC Geriatrics 2009, 9(Suppl 1):A70

Background: Acute appendicitis in geriatric patients represents the 7–12% of all acute abdomen cases. Elderly patients with appendicitis more frequently show generalized outward pain, with abdominal wall rigidity and distension and appearance of abdominal mass. The difference in the clinical presentation between the young and the aged patient may be due to the elderly person’s delay in addressing himself to the doctor, and not to differences in the pathologic process itself. The aim of this trial is to underline, through an analysis of the patients who underwent surgery for suspected acute appendicitis at the Division of General and Emergency Surgery of the University of Perugia, Hospital S. Maria in Terni, the clinical aspects of this pathology in the geriatric patient, in order to stress out the useful elements that may lead us to a early diagnosis and a reduced post operatory mortality.

Materials and methods: In our Division we treated surgically 16 over 75-year-old patients for acute appendicitis in the period of time between September 2006 and September 2008. An accurate anamnesis could be evaluated only in a few cases as most of the patients presented severe mental failure. The most frequent symptom was a continuous pain with no typical localization: right iliac region, 36%, all over the abdomen, 55% and less frequently in the lumbar region, 9%. The objective examination did not often allow the demonstration of pain in a specific region and the Blumberg sign was rarely positive. Only 21% of the patients showed a body temperature superior to 37.5°C. Because of the poor clinical indications, we often needed the approach of instrumental exams. [Abdomen US (100%), Plain abdominal films (85%) and CT (15%)]. The surgical intervention consisted in a median laparotomy in 46% of the cases.

Results: The classical symptoms of acute appendicitis in the elderly patient is less typical and with no characteristic objective and laboratory findings. This can cause a delay in diagnosis and a higher complication rate compared to the young patient (Appendicular abscess 8%, Pelvic abscess 3%, diffuse peritonitis 4%).

Conclusion: Acute appendicitis in the geriatric patient is often poorly diagnosed at its onset. This leads to a late surgical resolution of the acute process and to a post operatory morbidity and mortality increase in patients who are often clinically compromised. These patients need hospital admission and a well-timed surgical evaluation with the employment of more instrumental examinations than in the younger patients.

A71
Endovascular repair of abdominal aortic aneurysms in octogenarians
Chiara Lomazzi, Giulio Carcano, Gabriele Piffaretti, Matteo Tozzi and Patrizio Castelli
Department of Surgical Sciences, University of Insubria, Varese, Italy
BMC Geriatrics 2009, 9(Suppl 1):A71

Introduction: Endovascular aortic aneurysm repair has emerged as an appealing alternative particularly for patients considered at “high risk” for open surgery. The aim of this study was to investigate the results of endovascular treatment in patients aged >80 years compared with younger patients.

Methods: Between March 1998 and March 2008, 35 patients out of a group of 235 (14.9%) were treated for abdominal aortic aneurysm with endovascular endograft at our Institution; a retrospective analysis, about preoperative, operative and follow-up data were performed. Comparison was made with 200 patients aged <80 years.

Results: Octogenarians more frequently had impaired renal function (P = .05). We did not observe intraoperative mortality; the 30-day mortality rate was 8.5% (3/35) vs 1.5% (3/200) in the younger group (P = .03). The early complications were higher in aged patients 25.7% vs 13.5% (P = .006), as was the length of stay 7.7 ± 5.6 vs 5.7 ± 4 days (P = .05). The follow-up period was shorter in octogenarians (17 ± 15 vs 26 ± 24 months, P = .004). The endoleak incidence was higher in older patients: 48.5% vs 24.5% (P = .003), and also appeared earlier during the follow-up (6.3 ± 7 vs 9.5 ± 12 months P = .03). No significant difference was noted about the type of endoleak in the two groups. Mortality during the follow-up was 37.1% in the octogenarians group vs 16% in the younger group (P = .003). In the elderly group, 2 patients (6.2%) died for device-related complication.

Conclusion: In the present experience, the mortality, morbidity and complication rates were higher in the elderly group. In addition, the endoleak rate and the appearance time were statistically different, higher and earlier in the octogenarians. We believe that accurate patient selection and evaluation of life expectancy, quality of life related with procedural risk should be mandated to offer a safer and more efficacious endovascular repair to elderly patients.
A72
Is the patient’s age contraindication to thyroid surgery?
R Lucchini1, A Sanguinetti2, F Calzolari1, M d’Ajello1, F d’Ajello1, M Monacelli1 and N Avenia1
1Struttura Complessa Di Endocrinochirurgia del Collo e dei Tessuti Molli, Azienda Ospedaliera “Santa Maria” Terni, Italy
2Struttura Dipartimentale di Senologia Azienda Ospedaliera “Santa Maria” Terni, Italy

BMC Geriatrics 2009. 9(Suppl 1):A72

Background: There is increased risk of surgical treatment in elderly patients, but little has been written on the safety and efficacy of thyroid surgery in this group.

Objective: To determine if there is an increased risk of morbidity and mortality of thyroid surgery in patients over 75 years old.

Patients and methods: During the period 2005–2007, 702 patients aged 50 and over underwent procedures by two surgeons in our Unit. We retrospectively compared indications for surgery, procedures, pathology complications and mortality in three groups: 50–60-year-olds (234 patients), 61–74-year-olds (312 patients) and those aged 75 years and over (44 patients).

Results: The main indication for surgery in all three groups was compression or risk of malignancy. Total thyroidectomy was the commonest diagnosis, the over 75-year-olds had fewer benign multinodular goitres than the 61–74 group and more malignancy than the other two groups. There was no significant difference in mortality between the three groups.

Conclusion: Surgery in patients over 75 is as safe as in younger patients with no increase in morbidity and mortality. Benign multinodular goitre is the most common indication for surgery.

A73
Non pharmacological venous thromboembolism prophylaxis in old surgical patients
M Apperti1, L Goffredi1, M Luongo2, A Moraci2 and S Canonico3
1Dipartimento di Scienze Anestesiologiche, Chirurgiche e dell’Emergenza, Seconda Università di Napoli, Sezione di Flegologia e Studio della Riparazione Tissutale, Italy
2Divisione di Neurochirurgia, Seconda Università di Napoli, Italy
3Dipartimento di Chirurgia Generale e Specialistica – U.O. di Chirurgia Geriatrica, Seconda Università degli Studi di Napoli, Italy

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Aim of the study: DVT incidence is high even after patient’s discharge so an appropriate domiciliary prophylaxis is essential. Physical therapy is a valid (or indispensable), helpful, prophylaxis we focus the attention on “when” and “how” it become compulsory.

Materials and methods: Three modalities of physical therapy are known: physiotherapy, elastic compression, pneumatic compression. Elderly patients could have deambulation problems and active movements limitation, missing the calf muscular pump. This leads to cosgula formation precluding to venous thrombosis and pulmonary embolism. Cardiac pump disorders in periopera-
tive period can make “vis a tergo” ineffective; postoperative respiratory excursion difficulty, surgery-related limitation of diaphragmatic excursions or patient position can make “vis a fronte” ineffective, too. Physiotherapy is time-limited, venous return is improved only during therapeutic manoeuvres so it cannot represent the only treatment in a prophylaxis program. Elastic bandages allow effective pressure at the leg; 18–20 mmHg pressure is a good compromise between minimal effective pressure and patient compliance, and should be reduced to 8–10 mmHg at the thigh. A bandage loses 50% of compressive power in 24 hours so it could be used bandages with mild-long extension during the rest period; they’re are more susceptible to loss, efficacy in prevention DVT and have a “hemostatic string” effect. Elastic socks have an acceptable compliance (patient and medical staff) and even with some limitations due to patient’s immobility, represent an essential method in DVT domiciliary prophylaxis.

Results: Treadmill and gas plethysmography revealed that elastic socks do not improve ejection fraction. Our study confirms pneumatic intermittent compression (PCI) as choice treatment in postoperative cases with total pump failure and a concrete risk of VTE. During PCI pressure is sensibly higher than during elastic socks wearing: 45 mmHg at the ankle, 35 mmHg at the calf, 30 mmHg at the thigh; flow speed is increased of more than 200%. Alternative sequential compression and decompression cycles mimic the modality of filling and emptying of venous circle avoiding the eventual thrombus formation. Modulating decompression phases on patient venous repletion time avoid blood stasis and increase blood volume relocation per time unit.

Conclusion: Preoperatively: in patients with limited movements, decline oedema, venous stasis, elastic socks and physiotherapy; surgery and postoperatively: PCI. Active movements: elastic socks compression and physiotherapy until effective deambulation.

A74
Post-operative ileus in elderly patients
Rosalia Patti, Emanuele Picone, Paolo Aiello, Massimiliano Sparacello, Giovanni Migliore and Gaetano Di Vita
Department of Surgical and Oncological Science, Division of General Surgery, Head: Gaetano Di Vita, University of Palermo, Palermo, Italy

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Background and aim: Postoperative ileus is an abnormal pattern of gastrointestinal motility that is common after both abdominal and nonabdominal surgery. Aim of this study was to evaluate the incidence of postoperative ileus in elderly patients of age ≥ 70 years.

Materials and methods: Data collected from 20 patients undergoing right hemicolecction for right bowel cancer were evaluated. Patients included were divided in two groups of 10 subjects respectively, according their age. In the first group were allocated patients of age ≥70 years, whereas in the second group were included subjects of age ≤60 years. Patients affected by postoperative delirium or presenting complications that could altered the regain of intestinal motility were excluded. The time of first passage of flatus, the time of first defecation and the postoperative stay were evaluated.

(page number not for citation purposes)
**A75** The role of surgery for colorectal cancer in octogenarians

G Basili, L Lorenzetti, C Gabellieri, R Andreini and O Goletti

_Azienda USL 5 Pisa, P.O. Pontedera, U.O. Chirurgia Generale, Italy_

**Introduction:** Colorectal cancer (CRC) is the third most common cancer for both sexes; prognosis of CRC is strictly related with stage. Previous studies have suggested that elderly patients do not fare well after surgery for CRC, with high rates of emergency presentations, inoperability and perioperative mortality and decreased overall survival. Recent reports, however, have recommended applying the standard surgical approach in the elderly. The aim of our study was to assess the characteristics and perioperative morbidity and mortality in patients following CRC surgery and to analyse the specific outcomes in the elderly.

**Methods:** From July 2003 to December 2007 we retrospectively analyzed 499 consecutive patients who underwent surgery for CRC at our Institution. Risk factors included sex, age, cancer localization, Dukes’ and TNM classification, blood transfusion, and mode of presentation. Primary outcome was perioperative death.

**Results:** The study consisted of 268 men and 231 women with a mean age of 77.4 years. 248 patients (57%) were more than 75 years of age. The latter had tumors that were predominantly right-sided in location with a high incidence of advanced Dukes’ stage tumors. Moreover, larger number of these elderly patients presents as emergencies (10.5% Vs 4.6%). We have registered a preoperative mortality score of 1.9% in elective procedures and 15% in emergencies with differences among the age groups (p = Not Significant).

**Discussion:** Historically, it was suggested that elderly patients do not fare well after surgery for colorectal cancer. Recent report, however, have recommended a standard surgical approach for this group of patients. Our data strongly suggest an important role in perioperative resuscitation, fluid balance and osmolality avoiding dehydration and intestinal ischemia. The analysis of the literature reveals that a large proportion of elderly patients survive for 5 years or more following CRC resection. The results of our study support the view that elective CRC resection in the elderly population is worthwhile and should be performed for the same indications as younger patients. Resection should still be the first choice of treatment for elderly CRC patients. Our study renews this statement showing, in elective procedure, no perioperative mortality in under 75 s and a value of 3.1% in over 75 s. Resectional surgery in elderly patients is justified because it has been shown that old age per se is not an independent prognostic factor for surgery, although it is a significant factor for short-term morbidity and survival as we have reported.

**A76** Thermic ablation with RF of liver metastases from colorectal cancer

Guido Azzarello, Raffaele Lanteri, Marco Santangelo, Maria D’Angelo, Orazio Minutolo and Antonio Licata

_Dipartimento di Scienze Chirurgiche, Trapianti d’Organo e Tecnologie Avanzate – University of Catania, Italy_

**Aim of study:** Despite advances in screening procedures and the use of adjuvant therapy, approximately 50% of patients with colorectal cancer will develop metastatic disease. Surgical resection is now well accepted as the standard treatment for the liver metastases from colorectal cancer but tumour ablative techniques have been developed in recent years. The goal is to use them in patients with hepatic metastases, which are not totally resectable.

Aim of this study was to evaluate the role of radiofrequency ablation in the treatment of the hepatic metastasis of colorectal cancer (CRC).

**Materials and methods:** From November 2005 to July 2007 49 radiofrequency ablations have been performed in 19 patients (11 male and 8 female; mean age 65 years: range 50–78 years). The disease-free period was between 5 and 32 months. Hepatic nodules had a diameter inferior to 3 cm in 4 cases, while in 3 cases a single lesion was present. One patient had a single lesion after 2 courses of intravenous systemic chemotheraphy, which had a reduced greater lesion (from 6 to 3 cm) while a 2 cm lesion had disappeared. In the remaining 12 patients the mean number of lesions is 3 (range 1–13) with a diameter between 3 and 12 cm.

The radiofrequency ablation has been performed during laparotomy and vascular exclusion through clamping of the liver hilum in 4 cases and percutaneously under ultrasound guide in the remaining 15 cases. All patients underwent follow up by CT scan, CEA level and ultrasound every 3 months.

**Results:** One patient only has completed a 4 year follow up and is alive without local recurrence but with a cerebral metastasis. The other 18 patients have a 32 months follow-up with a survival of 50% (9 on 18).

**Conclusion:** Percutaneous, image guided, tumour ablation with thermal energy source, microwaves or laser has received increasing attention permitting the destruction of tumours without necessitating their removal and in many cases can be used in place of invasive and expensive techniques. Radiofrequency current, converted into heat through ion agitation and friction, can destroy liver tumours by means of coagulation necrosis. In clinical grounds RF ablation has been used for the treatment of different neoplasms including osteoid osteoma, hepatocellular carcinoma, renal cells carcinoma, hyperfunctioning adenoma and hepatic, cerebral and retroperitoneal metastases from several primary tumours.
In conclusion in our experience the radiofrequency ablation is a valid alternative method in the treatment of the hepatic metastasis of colorectal cancer.

A77

Colovesical fistulae in the sigmoid diverticulitis

Ivan Barillaro, Eriberto Farinella, Francesco Barillaro, Roberto Cirocchi, Alban Cacurri, Bledar Koltraka, Stefano Trastulli, Micol Sole Di Patrizi, Giannmario Giustozzi and Francesco Sciannameo

Department of General and Emergency Surgery, S. Maria Hospital, Termini-University of Perugia, Italy

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Background: Colonic diverticular disease is common in developed countries, and its prevalence increases with age. Enterovesical fistula, is an abnormal communication between bladder and a segment of the digestive tract. Colovesical fistula is the most common type (65%) of fistula associated with colonic diverticular disease. Colovesical fistulae are well-recognized but relatively uncommon in the surgical practice. As a result, few centers have sufficient experience in the investigation and surgical treatment of colovesical fistulae to develop clear protocols in its management. This study analyzes our experience in the treatment of patients with diverticulitis complicated by fistula formation in order to assess the appropriate management. Patients with neoplastic or iatrogenic colovesical fistulae were excluded from this study.

Materials and methods: We report the clinical cases of 2 patients with colovesical fistulae observed in our Surgical Department, one with elective surgery and the other one with emergency surgery. Both patients had a history of urological symptoms. In the first case, a barium enema was performed and it showed a sigmoid diverticular disease but not the presence of a colovesical fistula. A cystoscopy was then performed and it shows the presence of a fistula and cystitis. A pelvic CT was necessary to achieve a staging of diverticulitis. In the second case, CT showed a large amount of pus in the pelvic pouch, and several adherences involving the great epiploon, part of the sigmoid intestine and the bladder. In both cases we performed a sigmoid resection with a primary anastomosis together with a small vesical window ectomy and placing a Foley catheter for about 10 days in the elective surgery and 14 days in the emergency surgery.

Results: The most frequent signs and symptoms were fecaluria, pneumaturia, dysuria, hematuria and chronic abdominal pain in hypogastric and left iliac regions. Pneumaturia and fecaluria were only present in the patient who underwent elective surgery. In the first case, the fistula was detected by cystoscopy, in the second case, treated in emergency surgery, and the diagnosis was obtained by surgical exploration. In both cases the postoperative course was uncomplicated and there were no anastomotic leaks and no deaths.

Conclusion: The diagnosis of colovesical fistula is predominately clinical, as many of the patients complain of urological symptoms. However, cystoscopy is the most accurate test to detect fistulae, followed by barium enema. Colonic endoscopy and CT are the most reliable means of excluding a colonic malignancy. Besides CT allows achievement of a staging of diverticulitis disease. Cystoscopy, barium enema, colonic endoscopy and CT should be routine in the investigation of colovesical fistulae. Surgery is the only treatment that assures cure and avoids relapses. Resection and primary anastomosis should be the treatment of choice for colovesical fistulae, with an acceptable risk of anastomotic leak and mortality.

A78

Endovenous laser in the treatment of varicose veins of the lower limbs geriatric patient: results of activity for 6 years

V Barucchello, P Pontello, F Carrer, B Elezi, L Noce, G Marcellino, A Uzzau, L Corcos and D De Anna

Department of General Surgery, University of Udine, Udine 33100, Italy

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Introduction: Endovenous laser ablation (ELA) of the incompetent greater (GSV) and short (SSV) saphenous veins have been used with increasing frequency and the mechanism of action was recently clarified by histological, ultrasound and clinical observations. To verify the results obtained in the 535 limbs affected with varicose veins of the lower limbs (VVLL) treated by ELA of the GSV and the SSV, various surgical, sclerocautery and ELA, from March 2002 to March 2008.

Materials and methods: 535 limbs of 473 patients (62 bilateral) with VVLL were selected by clinical and ultrasound examination. C class of the CEAP classification of every single limb: C from 3 to 6, Ep, As +/- p. Pr. Inclusion criteria: superficial venous insufficiency, venous diameters of less than 15 mm. Exclusion criteria: phlebitis, saphenous aneurysms, congenital malformations, deep venous insufficiency. Age of the patients: range 70–85; right 215, left 320; veins subjected to ELA: GSV 330 (61.7%), SSV (65 (12.1%), peripheral varices incompetence (cases free from GSV and/or SSV incompetence) 105 (19.6%), other incompetent v. districts 35 (6.6%). In the different centers 210 peripheral varices were subjected to ELA: (39.2%), 250 to stab avulsion plus foam sclerotherapy (46.7%), 75 to stab avulsion only (14%); 162 incompetent perforators (30.2%) were subjected to ELA only, 243 (45.4%) were subjected to surgical interruption or foam sclerotherapy. Local or spinal anesthesia was used in one day surgery patients. An endovenous Diode 808 nm laser (Eufoton-Trieste-Italia) was employed, with sterilizable optical fibers of variable diameter from 400 to 1000 microns, by continuous 6–12 W emission power and variable retraction speed from <1 mm/sec to 3 mm/sec. Spinal or local anesthesia were preferred. Tumescent anesthesia and skin protection were seldom applied. All the 535 cases were clinically controlled once at least after 5–7 days. 330 limbs were followed up by duplex examinations from 30 days up to 2 years; 117 were controlled by clinical observation up to 3 years. Follow up and statistical analysis are still in progress.

Results: The intervention time was comprised between 20 and 90 minutes in the different centers. No skin burns in the GSV and SSV districts were produced. Limited skin burns by ELA of 27/260 peripheral varices (10.3%), limited ecchymosis, moderate pain in all the ELA districts was observed at the early clinical control. Saphenous phlebitis occurred in 44/535 limbs (8.2%) mainly in veins of more than 10 mm. in diameter. Duplex controls of 330 limbs showed the following reports: initially fibrous
thrombosis at 7 days, fibrotic thrombosis at the following controls with decreasing venous diameter up to saphenous atrophy not earlier than 12 months. Short non-occluded segments were observed in 63/330 cases (19%) without any hemodynamic or clinical relevance. S/301 GSVs (1.6%) developed a full recanalization with recurrent varices in 2 cases (0.6%). Satisfactory cosmetic results were obtained in 307/330 (93%) at 2 years. 23 (7%) unsatisfactory results were mainly due to temporary pigmentations. 37/330 (11.2%) limbs required foam sclerotherapy of residual varices. At 3 years 7/117 (5.9%) recurrent VVLL due to anatomical variations (5 limbs) and GSV recanalization (2 limbs) were observed. No haematomas, nervous damage or major complications occurred in the controlled cases.

**Conclusion:** ELA of the GSV and SSV using an 808 nm diode laser leads to sufficient vein wall injury to assure venous occlusion but limits the effect to the vein wall without thermal injury to the surrounding tissues. No tumescent anestesia and skin protection seem to be essential. Shrinking, thrombosis, early fibrosis and atrophy represent the mechanism of this. Saphenofemoral and saphenopopliteal disconnection facilitates the mechanism of action, prevents recurrence and ascending thrombosis. A higher risk for saphenous phlebitis in veins exceeding 10–12 mm in diameter has to be taken in account. In these veins the surgical ablation seems more recommendable. Stable occlusion in the majority of perforators and peripheral varices extensive disappearance were obtained (incompletely analyzed data). ELA and/or foam sclerotherapy of perforators and varices leads to the intervention time reduction and to more satisfactory clinical and cosmetic results in comparison with stripping and surgical stab avulsion.

**A79**

Is anaemia a correct indication to colonoscopy in elderly patients?

M Cirillo, N Gennarelli, A Calogero, C Fedele, C Mattera, R De Falco and R Lobello

**UOC Chirurgia generale ad indirizzo gastroenterico, AOU Policlinico, Università degli Studi di Napoli Federico II, Naples, Italy**

**BMC Geriatrics 2009. 9(Suppl 1):A79**

**Aims:** Anaemia and hematocritia are common symptoms in patients (pts) aged 70 years or older. Colonoscopy is strongly recommended in these elderly pts to investigate an underlying disease. Our study evaluates role, safety and utility of colonoscopy in pts aged 70 years or older with anaemia and/or hematocritia.

**Materials and methods:** We analyzed 1521 colonoscopies performed in last two years, from January 2007 to September 2008, in our Unit of Digestive Endoscopy. Two hundred ninety two pts (19.2%) had age ≥70 years. The indications, colonoscopy completion rate, endoscopic findings, complications and therapeutic consequences were evaluated. Sedation was used in all pts with midazolam (2–2.5 mg) and Floroglucine bihydrate (40–80 mg). The bowel preparation has been performed with PEG. The procedure has been accompanied by pulse oxymetry. 

**Results:** Two hundred ninety two pts, age range 70–97 years, 176 males, underwent colonoscopy. In these 292 elderly pts anaemia or hematocritia was indication for colonoscopy in 78 cases (26.7%). The other most frequent indications were: abdominal pain (58 pts = 19.7%), diarrhea or constipation (35 pts = 12.2%), follow-up of colonic surgery or endoscopic polypectomy (120 pts = 41%). In these 78 pts colonoscopy was completed in 72 pts (92.3%). Four pts presented a neoplastic stenosis. In two pts failure was pool bowel preparation. There weren't cardiologic or respiratory complications. The pathologic findings were: diverticular disease in 29 pts (37.2%), polyps in 16 pts (20.5%), cancer in 12 pts (15.4%), haemorrhoids in 9 pts (11.5%), aspecific colitis in 8 pts (10.2%), other in 4 pts (5.1%).

**Conclusion:** Colorectal cancer or polyps were detected in 32/78 pts (41%). Of these 26 pts (81.5%) successfully underwent a curative treatment (surgery or endoscopic polypectomy). Furthermore our results show that 7 neoplastic lesions (22%) were located in transverse or right colon; thus we suggest carrying out a total colonoscopy for diagnosis of colonic lesions. Colonoscopy is absolutely indicated in elderly pts with anemia: in fact over the third of examined pts (32/78) presented a neoplastic lesion.

**A80**

Surgery in patients older than 70 years: predictive factors of postoperative outcome

CESARE STABILINI, LUIGI DE SALVO, MARCO FRASCIO, ROSARIO FORNARO, ANTONIO AZZINNARO, FRANCESCA MANDOLFINO, BARBARA RICCI AND EZIO GIANELLA

**Patologia Chirurigica a Indirizzo Gastroenterologico - Dipartimento di Chirurgia (DiCMI), Università di Genova, Italy**

**BMC Geriatrics 2009. 9(Suppl 1):A80**

**Introduction:** Geriatric patients and their relative fragility with respect to younger patients represent a surgical dilemma for the general surgeon. This has led surgeons to adopt “tailored” techniques and strategies to treat them. The rapid increase of this aged population has given the clinician the chance to push forward the knowledge on this subset of patients and challenge previous concepts; thus changing behaviour and strategies when treating them.

**Aims:** Retrospective analysis of a cohort of patients aged >70 years submitted to abdominal surgery under general anaesthesia.

**Methods:** From January 2006 to march 2008, 80 consecutive patients (54 female-mean age 81 y SD 4.2) were submitted to surgery in the U.O. Patologia Chirurgica dell’Università di Genova. Preoperatively there was at least one comorbidity in 67 patients, 53 had cancer. The mean Charlson index in this series was 4.45 (ds 3.8 range 0–16). The patients were submitted to 80 procedures (7 biliary, 37 colorectal, 12 upper gi, 15 abdominal complex incisional hernias, 9 various). In twelve case the procedure took place in emergency setting.

**Results:** Postoperative general complications were registered in 23 cases (11 cardiovascular; 14 renal, 9 infectious, 5 respiratory, 1 portal thrombosis). Postoperative surgical complications were observed in 15 patients (18.8% – namely 5 anastomotic leaks, 3 small bowel obstructions, 4 haemorrhages, 1 intestinal infarction, 2 wound infections). Ten patients were submitted to reintervention (12.5%). Thirty-day postoperative mortality was 12.5% (10 subjects, 5 surgical related deaths). Logistic regression analysis showed that postoperative general complications were directly related to high Charlson index (OR 1.22; CI 95% 0.02–0.20); emergency setting (OR 22.4; CI 95% 4.2–120.1); reintervention (OR 8.2; CI 95% 1.52–43.66). Mortality rate rises with number of transfusions (OR 5.16 CI
A81
Gastric cancer in the elderly: what surgical approach?
L Finocchi, A Petrina, C Cini, M Badolato, C Boselli, F Rondelli and G Noya
Department of Surgical Oncology, University of Perugia, Italy

BMC Geriatrics 2009, 9(Suppl 1):A81

Purpose: We retrospectively reviewed our experience with gastric cancer and compared patients younger than 75 years old to elderly ones to see if there are any differences in clinicopathological features and early-term outcomes between the two groups.

Materials and methods: All cases of gastric cancer at Department of Surgical Oncology, University of Perugia, from January 2005 to May 2008 were reviewed.

Seventy patients with gastric cancer underwent gastric resection at our center in this period. Among these, 38 (54.3%) were 75 years old or older and 32 (45.7%) were aged 74 years or younger. A retrospective study was done on these two groups of patients. The age of 75 years was used as the cutoff based on previous literature on outcome analysis in elderly patients (Table 1).

Of the 70 patients undergoing surgery (M = 37, F = 33), 56 (80%) had radical intervention purposes, while 14 (20%) underwent palliative surgery. In the younger group 17 (70.8%) patients had a total gastrectomy with D2 lymphectomy and a subtotal gastrectomy with lymphectomy D2 in 7 patients (29.2%). In the second group we had 12 total gastrectomy (37.5%) and 20 subtotal-D2 gastrectomy (62.5%). The perioperative mortality was 0 (0%) in the first group, 2 (6.2%) in the second. We had 3 postoperative complications in the first group (12.5%), 1 of which (33.3%) required a reintervention; in the second group 5 patients (15.6%) had complications and in one case (20%) was requested a reintervention.

Conclusion: Our findings support the conclusion that: 1) gastric cancer in older patients warrants surgical resection because the benefit to these patients is the same as for younger patients in terms of early outcomes; 2) elderly patients did not present with more aggressive and advanced gastric carcinoma; and 3) age alone should not preclude gastric resection in elderly patients.

Table 1 (abstract A81) Characteristics of patients older and younger than 75 years undergoing surgery

<table>
<thead>
<tr>
<th></th>
<th>Elderly (≥75 aa)</th>
<th>Younger (&lt;75 aa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient number</td>
<td>38</td>
<td>32</td>
</tr>
<tr>
<td>Age</td>
<td>Min 75 – max 92 (md 83.1 aa)</td>
<td>Min 40-max 74 (md 61.4 aa)</td>
</tr>
<tr>
<td>Gender M/F</td>
<td>20/18</td>
<td>17/15</td>
</tr>
<tr>
<td>Location: Sup/md/inf/whole</td>
<td>13/7/21/0</td>
<td>9/8/16/2</td>
</tr>
<tr>
<td>Histological type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carcinoma/lymphoma</td>
<td>38/0</td>
<td>29/3</td>
</tr>
<tr>
<td>Differentiated/undiff.</td>
<td>32/6</td>
<td>19/10</td>
</tr>
<tr>
<td>Low/high grade</td>
<td>0/0</td>
<td>0/3</td>
</tr>
<tr>
<td>Depth of invasion: T1/pT2/pT3/pT4</td>
<td>6/5/19/8</td>
<td>7/7/10/4 (excluding 3 lymphomas)</td>
</tr>
<tr>
<td>Lymph node involvement: pN0/pN1/pN2/pN3</td>
<td>14/1/1/1/1/2</td>
<td>10/7/7/4 (excluding 3 lymphomas)</td>
</tr>
<tr>
<td>Stage: IA/IB/II/III/A/IIIB/IV</td>
<td>5/1/10/7/2/13</td>
<td>7/2/4/3/2/10 (excluding 3 lymphomas)</td>
</tr>
<tr>
<td>Type of resection: R0/R1–R2</td>
<td>32/6</td>
<td>24/8</td>
</tr>
<tr>
<td>Extent of lymphadenectomy: D1/D2/D3</td>
<td>22/9/1</td>
<td>12/13/2</td>
</tr>
<tr>
<td>N° lymph nodes removed</td>
<td>629</td>
<td>630</td>
</tr>
<tr>
<td>N° lymph nodes positive (%)</td>
<td>125 (19.9%)</td>
<td>187 (29.7%)</td>
</tr>
</tbody>
</table>
tion of group A was 6.3% (7 cases) and the incidence of conversion to laparotomy was 12.7% (14 cases).

Conclusion: The correct selection of patients that undergo to laparoscopic cholecystectomy permits better results than the traditional laparotomic cholecystectomy. In fact there is a reduction of infections, hospital stay and post-operative pain.

A83
Prostatic mapping in diagnosis and follow-up for prostatic cancer patients treated by CT-RT
Guido Azzarello, Orazio Minutolo, Raffaele Lanteri, Maria D’Angelo, Marco Santangelo and Antonio Di Cataldo
Dipartimento di Scienze Chirurgiche, Trapianti d’Organo e Tecnologie Avanzate, University of Catania, Italy

BMC Geriatrics 2009, 9(Suppl 1):A83

Aim of study: Prostate cancer (PCa) ranks third in cancer incidence and is the fourth leading cause of cancer-related deaths in Italy. The widespread use of the PSA test in clinical practice has been associated with a constant increase in the number of diagnosed PCa cases both in the USA (170 per 100,000) and Europe. In Italy the rate rose from 20 cases per 100,000 in 1976 to 40 per 100,000 in 1997.

Materials and methods: We performed in “Dipartimento di Scienze Chirurgiche, Trapianti d’Organo e Tecnologie Avanzate”, Università di Catania in the last five years, 96 prostatic mapping in patients (over 80 years old). All patients presented a Prostatic Specific Antigen level (PSA) over 2.5 ng/ml. In patients with PSA rate under 10 ng/ml and with E.D.A.R. or negative transanal US, dosage PSA free/tot. was lower than 15 per cent. 45 patients constituted this group, aged between 80 and 88 years old. We performed all prostatic mapping by local anesthesia using a 18 GG needle.

Results: This method permits to demonstrate a positive diagnosis for cancer in 27 patients (60%); other patients underwent to another prostatic mapping after an year because of high PSA level (18 prostatic mapping, just a case positive for cancer). Other three follow-up patients, demonstrated a high PSA level higher than 0.5 ng/ml. Prostatic mapping (12 biopsy) allowed us to confirm a recurrence neoplasm.

Conclusion: This reduction in the PCa mortality rate, which has coincided with the widespread use of the PSA test, is to be attributed to the higher number of organ-confined (and therefore curable) cancers detected but also to a more effective treatment of the advanced disease and to a more accurate identification of causes of death; in fact, the areas with the highest rates of early detection and treatment (USA and Canada) do not report the lowest mortality rates. The reduction in PCa mortality in Italy has been noted in all the age groups where there had been the highest increase in the incidence of this cancer. Early diagnosis of an increasing number of organ-confined cases and the resulting intention-to-treat approach are likely to have contributed to this outcome.

Early diagnosis, screening for this kind of cancer (PSA dosage and prostatic mapping), natural biological behavior and evolution in medical and surgical treatment had improved prognosis, life quality for patient who had diagnosed prostatic cancer.

A84
The primary gastric stump cancer in geriatric patients
Bledar Koltraka, Eriberto Farinella, Ivan Barillaro, Roberto Cirocchi, Alban Cacurri, Francesco Barillaro, Stefano Trastulli, Micol Sole Di Patrizi, Gianmarino Giustozzi and Francesco Sciannameo
Department of General and Emergency Surgery, S. Maria Hospital, Terni-University of Perugia, Italy

BMC Geriatrics 2009, 9(Suppl 1):A84

Background: The pathophysiology of gastric stump cancer is due to the synergic action between multiple factors including the duodenogastric biliary reflux and bacterial colonization of the stump. The histological features of this cancer are not different from cancer that arises in normal stomach.

In this study we present our experience in order to analyze the importance of early treatment of gastric stump cancer in geriatric patients.

Methods: The authors present 7 cases of primary gastric stump cancer surgically treated in our department during the period 1999–2002. The age of patients was between 61 and 79 years. The average time between primary gastric resection and diagnosis of carcinoma of gastric stump was 19 years (6–32 years). All patients considered operable underwent total gastrectomy and restoration of intestinal transit according to Roux’s technique.

Results: Four patients (57.14%) were resectable, including 3 aged over 70 years. In all cases total gastrectomy with systematic D2 lymphadenectomy was performed. In the remaining patients who did not undergo gastrectomy, 2 patients were treated with exploratory laparotomy because of very advanced and unresectable gastric cancer, and 1 patient was not suitable for surgical treatment as his general conditions were poor. The 5-year survival rate in patients resected was 50%.

Conclusion: Our series of 7 cases of carcinoma of the gastric stump highlights the importance of endoscopic investigations during the follow-up of patients with gastric resection, especially after 15 years, and of radical surgery (total gastrectomy with D2 lymph node dissection) in geriatric patients.

A85
Does the routine histological examination of the inferior mesenteric artery lymph nodes have a prognostic value in elderly patients with sigmoid colon and rectum tumours?
M Fava, A Turoldo, M Roseano, P Makovac and G Liguori
Istituto di Clinica Chirurgica, Università degli Studi di Trieste, Italy

BMC Geriatrics 2009, 9(Suppl 1):A85

Introduction: The purpose of our study is to estimate the frequency of the histopathological exam, analyze the prognostic/therapeutic value of central LN examination and determine their advantage in elderly patients.

Materials and methods: This retrospective study analyzes 519 patients who were hospitalized from 1980 to 2008 at the “Istituto di Clinica Chirurgica” of the University of Trieste and underwent curative surgery for a sigmoid colon and/or rectum tumor (minimum follow up period of 4 years): 311 males and 208
females, mean age of 66.95 (range: 17–94 years). 192 patients were younger than 65, 211 were between 65 and 74, 109 between 75 and 84 and 7 older than 84 years.

In cases of complete tumor resection and complete lymphadenectomy the surgery was considered as curative. The tumor was located on sigmoid colon in 147 cases, on rectum in 346 cases (high rectum 101, middle rectum 122 and low rectum 123 cases) and in 26 on both.

372 anterior rectal resections, 20 Hartman’s resections, 85 Miles resections and 42 segmental colonic resections were performed. The choice of the surgical technique, resection or abdominoperineal amputation, was defined by the tumor location; stage, dimension and biological characteristics were not taken into account.

In all the cases of subperitoneal tumors we performed a total mesorectal excision associated with IMA LN dissection all the way to its origin from the aorta. In 42 cases among patients with poor general conditions and/or high operative risk, with the local state of the tumor taken into account, we performed only a I/II level lymphadenectomy. However, in all the cases, the purpose was to dissect at least 13 LN, which should represent the cut-off for a precise staging of the tumor. Those LN are often located in the proximity of the tumor or along the colon wall. That is why, in order to retrieve the LN, we opted for examination of the surgical specimen immediately after the dissection. LN located less than 5 cm from the tumor were classified as marginal, those along the branches of the mesenteric artery or more than 5 cm from the tumor as immediate and those at the origin of the IMA as central. The surgical specimen was then analyzed and the LN are classified by the pathologist as well.

The Kaplan-Meier actuarial method was used to calculate the cause-specific survival rate. The Log-rank test was used to compare the results. The Cox regression was used as a multivariate analysis. The SPSS software was used for the statistical procedures.

Results: In 306 cases (59.0%) the LN were retrieved from the surgical specimen and histologically evaluated. In 26 of those (8.5%) they were metastatic. The retrieval/identification of the LN was not influenced by the patients’ age, with the exception of patients older than 84 years. In those patients the histological determination decreased by 14.3% (64.6% in the first, 54.5% in the second, 60.6% in the third, and 14.3% in the fourth age group, p = 0.017).

As regards the location of the tumor the central LN identification was possible in: 58.5% cases of sigmoid colon tumor, 60.4% of high rectum tumor, 63.9% of middle rectum tumor, 52% of low rectum tumor and 65.4% synchronous tumors (p = 0.317).

The mortality and morbidity rate among patients in which the histological evaluation of central LN was possible and those in which it wasn’t were not statistically significant (the mortality rate was 3.1% and 2.9%, the overall morbidity rate was 38% and 31%, the specific morbidity rate (fistulae) was 6.8% and 4.9% respectively).

The actuarial survival rate at 5 years was 73.2% in patients in which the central LN status was determined and 62.7% in those in which it wasn’t (p = 0.0066). As regards the stage of the disease the actuarial survival rate was respectively 85.1% and 82.2% for Dukes A (patients with central LN determined status and those in which it was undetermined), (p = 0.5213), 79.2% and 64.36% for Dukes B, (p = 0.0123) and 56.1% and 34.7% or Dukes C (p = 0.0468) patients.

The actuarial survival rate in patients older than 75 years was 73.4% in those in which the central LN status was evaluated and 53.57% in those in which it wasn’t (p = 0.1122). As regards the number of patients the groups were comparable: Dukes A 14 patients each, Dukes B 44 patients in the first group and 32 in the second, Dukes C 15 patients each (p = 0.719).

Considering the Dukes stage, the “T” of the tumor, the histological evaluation of the central LN and the grading of the tumor as independent variables (results that were statistically significant at the univariate analysis), the Cox logistic regression assigned an independent value only to the Dukes stage [Exp (B) 2.082] and the central lymph node evaluation [Exp (B) 1.402]. The same analysis applied to the elderly patients assigned an independent prognostic value to the Dukes stage only.

Conclusion: In our experience, in the cases of sigmoid colon and rectum tumors, the histological evaluation of the central LN has a precise prognostic value. Patients in which the histological evaluation of the central LN was performed had a better prognosis than patients in which the histological evaluation wasn’t possible, considering patients with tumors in the same stage. In the Dukes A cases the histological evaluation of the central LN didn’t have a prognostic/therapeutic value. The histological evaluation of the central LN represents the quality standard of the lymphadenectomy and ensures a precise staging of the tumor, which decreases the shifting between tumor stages. From an oncological point of view the therapeutic improvement achieved can be ascribed to metastatic LN dissection. The advantage of the precise LN evaluation is confirmed, although not as statistically significant, even in the elderly patients. Therefore, we recommend the dissection/research of the central LN even in this group of patients.

A86

Acute ischemic colitis in elderly: medical or surgical urgency?

Fabiola De Vita1, Renato Pietroletti2, Gianfranco Amicucci1 and Sergio Leardi1

1Geriatric Surgery, University of L’Aquila, L’Aquila, Italy
2Surgery Unit, University of L’Aquila, L’Aquila, Italy

BMC Geriatrics 2009, 9(Suppl 1):A86

Background: Ischemic colitis is frequent disease in the elderly population. Early medical or surgical treatment is the key factor for a favourable prognosis. Many clinical, biohumoral and pathologic factors had been considered to indicate better treatment. “Severity” of the disease seems a prognostic factor for surgery. Aim of this study is to identified objective factors predictive of the better type and time of treatment.

Materials and methods: Seventy-two elderly patients (m:39, f:33; median age 74.8 years) affected by ischemic colitis were retrospectively in order to asses clinical, biohumoral, endoscopic and x-ray findings predictive of the most suitable treatment. Clinical follow-up was implemented to evaluate the long-term prognosis after mean period of 6 years post treatment. Fifty-eight percent of the ischaemic lesions involved the left colon, 23.6% the right colon, 9.7% the sigmoid colon and 8.3%
involved transverse colon. Cardiovascular disease was associated in 79% of patients. Fifty-three patients (73.6%) were treated by medical therapy only (broad spectrum antibiotics, fasting, parenteral nutrition and heparin prophylaxis) for a mean period of 7 days, with positive outcome. Nineteen patients (26.3%) underwent surgery: left (42.1%) and right hemicolecction (15.7%), Hartmann resection (26.3%), subtotal resection (10.5%), sigmoid resection (5.4%). Urgent surgery was performed in 6 patients within 12–36 hours from admission; 13 patients underwent surgery after failure of previous medical treatment.

**Results:** Absence of bowel sounds ($\chi^2 = 61.9, p < 0.001$), ileus ($\chi^2 = 17.8, p < 0.001$), and air fluid levels in plain abdominal x-rays ($\chi^2 = 18.6, p < 0.001$) were significant risk factors for surgery. The postoperative morbidity rate was 52.5% (10 cases) and included pneumonia (5 cases), abdominal sepsis (2 cases), wound sepsis (2 cases) and pulmonary embolism (1 case). The postoperative mortality rate was 36.8% (7 cases), due to sepsis and multi-organ failure in all cases. At follow-up we observed favourable outcome in the remaining 65 patients, without findings of recurrent acute or chronic ischemic colitis.

**Conclusion:** In conclusion, our results seem to suggest that medical therapy is the mainstay of treatment for acute ischemic colitis in elderly patient with good results. Surgery, with high rate of postoperative morbidity and mortality is indicated only in cases of peritonitis. Segmental resection of colon with ischemic lesions is the gold standard.

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**A87**

**Treatment of esophageal cancer in inoperable elderly patients: our experience**

F Frazzetta, G Caldiero, A Tornambè, M Lucania, G De Simone, V Territo, G Lo Bue, R Vetri and M Frazzetta

Surgical and Oncological Department, University of Palermo, Italy

**BMC Geriatrics** 2009, 9(Suppl 1):A87

**Introduction:** The esophagus carcinoma has an incidence rate of 3–4 new cases per 100,000 inhabitants, per year, with a male/female ratio of 3:1 and with a low incidence between the VI–VII decade of life. In Italy, the incidence rate equals 2,000 new cases/year with a mortality rate of 3–5/100,000 inhabitants.

**Patients and methods:** During the 1997–2007 decade, 87 cases of esophageal neoplasm were observed, of which 15 patients whose age range was 70–85 years, 11 males and 4 females, all presented with associated cardiovascular, respiratory and metabolic pathologies that would not allow the possibility of surgical approach. Patients enrolled in the current study contain in their clinical history several risk factors, and more precisely: Barrett’s esophagus 2, Achalasia 3, Reflux esophagitis 5. Two out of 15 patients were alcohol-dependent, whereas 11/15 were heavy smokers. All patients presented serious nutritional deficits. Diagnosis was made after symptoms of dysphagia manifested, after having undergone an endoscopic examination and biopsy. Clinical staging provided for the ultrasound examination and thoracic-abdominal CT. The neoplasias were located 12 in the cardiac region, 1 in the medio-thoracic region, 2 in the cervical tract. There were 5 carcinomas in situ, 4 infiltrating adenocarcinomas, 6 squamous cell carcinomas of which 3 stenosed, 2 ulcerated, 1 vegetative. Hepatic metastasis was present in 8 out of the 15 cases, lymphonodal and mediastinic in 2 cases. An endoscopic mucosectomy was performed in the 5 patients affected by carcinomas in situ. In the 3 patients affected with stenosed squamous cell carcinomas, a series of dilations and prosthetic nitinol stent positioning (Boston Scientifics) were undertaken in order to restore the passage as much as possible. The four infiltrating and metastatic adenocarcinomas were treated with chemotherapy cycles. A case of a vegetative tumor with hepatic metastasis was treated with Bicap use (monopolar electrode), with thermal destruction of the neoplastic tissue, and followed by a series of treatment cycles undertaken to eradicate it. The remaining two ulcerated cases were treated with Argon plasma coagulator.

**Results:** In five years, four out of five patients afflicted by carcinoma in situ treated with endoscopic mucosectomy were free from the ailment and did not present morbidity associated with the treatment undertaken, only one of them passed away due to a cardiovascular cause. Patients who underwent pneumatic dilatation and prosthetic placement obtained an excellent control of the dysphagic symptoms, especially in the first months after the prosthetic placement, with a considerable improvement in quality of life, but their survival rate did not surpass 18 months. The patients guided through chemotherapy cycles, while considering their general condition, of comorbidity and age, have had a considerable decrease in QL without obtaining noticeable improvements in the survival rate. Patients treated with Argon plasma coagulator (APC) and with Bicap have had a fast progression of the illness, a decrease in QL, and passed away in six months due to serious hemorrhagic complications.

**Conclusion:** In the treatment of esophageal cancer, when diagnosed after 70 years of age, it becomes indispensable to keep in mind, beyond the size of the tumor and diffusion of the ailment, the anagraphic age of the patient, the comorbidity presence, which renders a “radical” therapy disproportionate. It should be outlined the principle that a good palliation is more useful for patients of treatments which carry heavy risk, tending to radical surgeries of dubious use. The esophageal prosthetic placement seems to be the treatment of choice in inoperable stenosed carcinomas with the aim of restoring the passage and/or improving the dysphagia.

The endoscopic mucosectomy in agreement with literature data instead obtained indications in the inoperable carcinomas in situ. This low invasion and reliable method, from an oncologic point of view, allows for the complete remove of the mucous section of the lesion up to the lamina, and thanks to the use of image magnification techniques and the use of the Narrow Band Imaging, it is now more precise and safe. The mucosectomy contains risks comparable to a polypectomy and in regards to other methods boasts the advantage of quick execution and of offering a radical surgery that would not be otherwise achievable. Treatments with Argon plasma and with Bicap are considered to be entirely palliative, compulsory options in extremely advanced clinical cases and for severely malnourished patients. The chemo and radiotherapy are often impractical and when it’s possible to follow the treatment, the limits placed on age and comorbidity present, drastically reduce their efficacy. Nevertheless, it continues to be imperative to improve the quality of life in inoperable geriatric patients.
A88

Comparison between transperitoneal and retroperitoneal minimal invasive adrenalectomy in 189 cases

R Bellagamba, G Nigri, P Aurello, F D’Angelo, S Valabrega and G Ramaccia
department of surgery, S. Andrea Hospital, II School of Medicine, University of Rome “La Sapienza”, Rome, Italy

BMC Geriatrics 2009, 9(Suppl 1):88

Aim: Laparoscopic adrenalectomy is the gold standard for benign lesions. So far only a few studies have compared the transperitoneal (TLA) and retroperitoneal (RLA) adrenalectomy. We present the results of our experiences on 189 cases comparing TLA and RLA.

Materials and methods: Between 1995 and 2005 121 TLA and 68 RLA procedures were performed. Three equal time periods were analyzed. Mann Whitney U test or two tailed Fisher exact test were used, where appropriate, by using SPSS for Windows 13.0. Statistical significance was set at P < 0.05.

Results: Period I: Twenty-nine patients were recorded. Mean operative time was 185.6 ± 37.2 min and 125.7 ± 37.7 min in the RLA and TLA subgroup (P < 0.005). Two procedures were converted in the TLA (splenic lesion and haemorrhage). The time of first oral intake was 1.25 ± 0.4 days after the RLA, and 2.76 ± 1.5 days after the TLA (P < 0.005). The mean hospital stay in the RLA subgroup was 3.8 ± 1.1 days versus 6.3 ± 2.7 days in the TLA subgroup (P < 0.005).

Period II: One hundred seven patients were recorded. Mean operative time was of 145.3 ± 47.1 min and 114 ± 51.6 min in the RLA and TLA respectively (P < 0.005). Intraoperative blood loss was 443.4 ± 236 cc in the RLA group and 279.5 ± 637 cc in the TLA group (P < 0.005). The time of first oral intake was of 1.3 ± 0.6 days and 1.6 ± 0.9 days in the RLA and TLA respectively (P < 0.005). The conversion rate 5% and 6% in the RLA and TLA respectively.

Period III: Fifty-three patients were recorded. Mean operative time was of 139 ± 35 min and 97.8 ± 32 min in the RLA and TLA group respectively (P < 0.001). Intraoperative blood loss was 438 ± 177 cc in the RLA group and 144 ± 166 cc in the TLA group (P < 0.005). The time of first oral intake was of 1.1 ± 0.3 days and 1.6 ± 0.7 days in the RLA and TLA respectively (P < 0.005).

Conclusion: TLA and RLA have different advantages, but the latter requires more experience. We found a significant advantage in TLA about operative time and blood loss, in RLA for hospital stay and first oral intake, significant improvement were recorded in the RLA access between period I vs. II and I vs. III in the mean operative time, hospital stay and first oral intake.

A89

The laparoscopic Nissen fundoplication is a safe and effective treatment of the pathological acid and bile gastroesophageal reflux in the elderly

A Brillantino, L Monaco, M Schettino, F Torelli, G Izzo, A Cosenza, L Marano, R Porfidia, G Reda, F Foresta, P Maglione and N Di Martino
VIII Division of General Surgery, Second University of Naples, Italy

BMC Geriatrics 2009, 9(Suppl 1):89

Aim: The influence of age in the choice of treatment for gastroesophageal reflux disease (GERD) is still debated. In summary, although the laparoscopic antireflux surgery is generally undertaken with some hesitation in the elderly and the total fundoplication is considered an obstacle in presence of defective peristaltic activity, some authors recently showed good clinical outcome and low morbidity in the older GERD patients treated by laparoscopic 360° fundoplication.

This study aimed to compare the clinical outcome of the younger with the older patients undergone laparoscopic antireflux surgery for chronic GERD.

Methods: Fifty-seven consecutive patients underwent laparoscopic Nissen fundoplication for GERD. Thirty-two patients were younger than 65 years (Group I) and twenty-five were more than 65 years old (Group II). Before and one year after fundoplication all the patients underwent symptom questionnaires, upper gastrointestinal endoscopy, esophageal manometry and combined 24 h esophageal pH and bilirubin monitoring.

Results: The prevalence of atypical symptoms and hiatal hernia was higher in the elderly patients, compared to the younger group (60% vs 32%; 80% vs 68%; P < 0.05). The older patients showed more often than younger severe esophagitis and impaired esophageal peristalsis (44% vs 27%; 60% vs 32%; P < 0.05). Pathological esophageal bile exposure was more common among the elderly (88% vs 68%), in contrast with the abnormal acid exposure that was similar for the two groups. The operation time and the incidence of intraoperative and post-operative complications didn’t differ significantly between the two groups. The median hospitalization time was 3 days in each group. At follow-up none of the enrolled patients showed GERD symptoms. Mild esophagitis was found only in two patients which preoperatively showed severe esophageal mucosal damage. The combined 24 h esophageal pH and bilirubin monitoring showed the normalization of both acid and bile reflux in the two groups.

Conclusion: Our results suggest that age doesn’t affect the outcome of laparoscopic Nissen fundoplication. The antireflux surgery represents a safe and effective treatment for GERD, either in the young or in the elderly patients, achieving good results in improving symptoms, healing esophagitis and suppressing both acid and bile reflux.

A90

Neoadjuvant chemotherapy in locally advanced gastric adenocarcinoma: our experience in the elderly

W Bugiantella, E Cavazzoni, E Elia, LP Evoli, L Graziosi, E Mingrone and A Donini
Università degli Studi di Perugia, Sezione di Chirurgia Generale e d’Urgenza, Ospedale “Santa Maria della Misericordia”, Perugia, Italy

BMC Geriatrics 2009, 9(Suppl 1):90

Background: Gastric cancer is a neoplasm with a poor prognosis, often diagnosed in advanced stage of disease, specially in elderly patients. Neoadjuvant chemotherapy may increase the possibility of complete surgical resection, improving progression-free and overall survival (five-years survival of 36% compared with 23% of patients treated by surgery alone) as shown in the MAGIC Trial by Cunningham et al.
Materials and methods: Since November 2006, at our Institute, selected patients affected by gastric adenocarcinoma were enrolled in a program of peri-operative chemotherapy; six of them were over 70 years old. The neoplasia was diagnosed and staged by gastroscopy, endoscopic ultrasonography and total body $^{18}$FDG-PET-CT. Inclusion criteria were: cT2N+M0 or cT3-4N × M0, age <75, Karnofsky Performance Status >60%, no hepatic, renal and bone marrow failure (creatinine <1.5 mg/dL; clearance creatinine >50 ml/L; total bilirubin <2 mg/dL; white blood cells >3500 mm$^3$; platelets >14000/mm$^3$). The patient underwent three cycles of pre-operative chemotherapy with Epirubicine, Cisplatin and S-Fluorouracil (ECF) as MAGIC Trial showed. After every cycle hepatic, renal, bone marrow and cardiac functionality were evaluated. Fifteen days after the third pre-operative ECF cycle the patients underwent endoscopic ultrasonography and total body $^{18}$FDG-PET-CT to evaluate the tumor response to chemotherapy, then they underwent surgery. Thirty day after surgery they started the first of the three post-operative ECF. One patient just finished pre-operative chemotherapy and she will be operated in four weeks. Clinical and pathological characteristics of patients are summarized in Table 1.

Results: All patients completed the pre-operative chemotherapy without toxicity. Three patients underwent D2 total gastrectomy, one patient D2 subtotal gastrectomy and another patient, with diffuse pattern adenocarcinoma and lymph node metastases (N3), underwent D1 total gastrectomy. No peri- and post-operative mortality and morbidity were observed. Chemotherapy was started one month after surgery in all five patients. During post-operative chemotherapy one patient developed right subclavian vein thrombosis (close to the site of port-a-cath); in one patient the second cycle of post-operative chemotherapy was stopped due to renal failure. The patient affected by liver metastases and the one with N3 lymph node metastases died respectively 18 and 11 months after surgery. Six of them were over 70 years old. The neoplasia was diagnosed and staged by gastroscopy, endoscopic ultrasonography and total body $^{18}$FDG-PET-CT. Inclusion criteria were: cT2N+M0 or cT3-4N × M0, age <75, Karnofsky Performance Status >60%, no hepatic, renal and bone marrow failure (creatinine <1.5 mg/dL; clearance creatinine >50 ml/L; total bilirubin <2 mg/dL; white blood cells >3500 mm$^3$; platelets >14000/mm$^3$). The patient underwent three cycles of pre-operative chemotherapy with Epirubicine, Cisplatin and S-Fluorouracil (ECF) as MAGIC Trial showed. After every cycle hepatic, renal, bone marrow and cardiac functionality were evaluated. Fifteen days after the third pre-operative ECF cycle the patients underwent endoscopic ultrasonography and total body $^{18}$FDG-PET-CT to evaluate the tumor response to chemotherapy, then they underwent surgery. Thirty day after surgery they started the first of the three post-operative ECF. One patient just finished pre-operative chemotherapy and she will be operated in four weeks. Clinical and pathological characteristics of patients are summarized in Table 1.

Conclusion: Although surgical resection remains the key component in the treatment of gastric cancer, improved outcome depends on multidisciplinary treatments. Neo-adjuvant chemotherapy may be a valid option in downstaging the primary tumor and increasing resectability rates, as shown by MAGIC Trial. Our little experience shows that peri-operative chemotherapy with ECF has low toxicity and it may be chosen in elderly affected by locally advanced gastric adenocarcinoma.

A91

Complications and results of lateral internal sphincterotomy for chronic anal fissure

F Cadeddu, I Selvaggio, MG Muzi, F Andreoli, D Amabile and G Milito

Department of Surgery, University Hospital Tor Vergata, Rome, Italy

BMC Geriatrics 2009, 9(Suppl 1):A91

Background: Treatment of chronic anal fissure has been directed at relaxing sphenicter tone. Lateral internal sphincterotomy (LIS), since its introduction in 1951 by Eisenhammer, has been considered the gold standard approach with healing rate of approaching 95%. However, concerns have been raised about postoperative impairment of faecal incontinence after LIS. Actually, the incidence of faecal incontinence reported in literature varies widely from 1.3% to 30% or more. Several factors have been associated to affect LIS outcomes and morbidities, first of all accurate surgical technique, length of sphincterotomy, previous anorectal surgery, additional procedures and obstetric history.

Materials and methods: Between January 2004 and December 2006, 200 consecutive patients with chronic anal fissure, non responsive to previous treatment with nitroglyerin ointment or nifedipine, underwent LIS. Duration of operation, postoperative pain, duration of hospital stay, postoperative complications, time to resumption of work, recurrence and time to recurrence were assessed in all patients.

Results: The median operative time was 11 minutes (range 5–20); the median postoperative pain VAS score was 2 (range 0–4); every patient was mobilized on between 2 and 4 hours after surgery; the median hospital stay was 8 hours (range 7–10); the median time off work was 11 days (range 5–20 days). Neither impairment of faecal incontinence nor relapse was detected in all patients at the end of observational period.

Conclusion: Once again, SLI appeared as a high successful tool to treat chronic anal fissure after failure of chemical sphincterotomy. Furthermore if technical guidelines are rigorously respected and the device is correctly applied, feared late complications, i.e. faecal continence impairment, are largely reduced.

Table 1 (abstract A90) Clinical and pathological characteristics of patients

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age</th>
<th>Neoplasm localization</th>
<th>Histologic type (Lauren)</th>
<th>cTNMpre- NAC</th>
<th>cTNMpost- NAC</th>
<th>Surgery</th>
<th>pTNM</th>
<th>TRG(Becker)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 M</td>
<td>74</td>
<td>Antrum</td>
<td>Intestinal</td>
<td>T3 N+ M0</td>
<td>T2 N+ M0</td>
<td>D2 gastrectomy, splenectomy, hepatic wedge resections</td>
<td>T3 N1 M1</td>
<td>3</td>
</tr>
<tr>
<td>2 F</td>
<td>71</td>
<td>Small curve</td>
<td>Intestinal</td>
<td>T3 N+ M0</td>
<td>T2b N+ M0</td>
<td>D3 gastrectomy</td>
<td>T2b N1 M0</td>
<td>3</td>
</tr>
<tr>
<td>3 M</td>
<td>75</td>
<td>Angulus</td>
<td>Diffuse</td>
<td>T3 N0 M0</td>
<td>T2 N0 M0</td>
<td>D2 gastrectomy</td>
<td>T2a N0 M0</td>
<td>2</td>
</tr>
<tr>
<td>4 M</td>
<td>74</td>
<td>Body</td>
<td>Diffuse</td>
<td>T3 N+ M0</td>
<td>T3 N+ M0</td>
<td>D1 gastrectomy</td>
<td>T3 N3 M0</td>
<td>3</td>
</tr>
<tr>
<td>5 F</td>
<td>75</td>
<td>Angulus</td>
<td>Diffuse</td>
<td>T3 N+ M0</td>
<td>T2 N0 M0</td>
<td>D2 gastroresection</td>
<td>T1 N0 M0</td>
<td>1</td>
</tr>
<tr>
<td>6 F</td>
<td>71</td>
<td>Oesofagus-gastric junction (Siewert III)</td>
<td>Intestinal</td>
<td>T3 N+ M0</td>
<td>T2 N+ M0</td>
<td>-</td>
<td>-</td>
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</tr>
</tbody>
</table>
A92
Prognostic value of IL-6 and IL-10 serum levels and immunonutritional assessment in determining postoperative complications after geriatric surgery
Bianca Cudia1, Carmela Rita Balistreri2, Giovanni Guercio1, Francesco Bavetta1, Calogero Ricotta1 and Giuseppe Diana1
1Department of Surgery GEN.UR.TO, University of Palermo, Palermo, Italy
2Department of Pathobiology and Biomedical Methodologies, University of Palermo, Palermo, Italy

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Background: The onset of postoperative septic complications has recently been associated to serum levels of interleukin (IL)-6 and IL-10. Patients with complications have higher serum levels than patients without complication after surgery. IL-6 has been recognized as early marker of postoperative septic events. Furthermore IL-6 increases with age, especially if there are associated diseases. It is a sign of functional deterioration of different organs. The disregulation in interleukin production, anesthetic drugs, hemorrhage and transfusions may lead to the onset of postoperative complications. The latter are more frequent in oncologic patients. The aim of our study is to evaluate pre- and postoperative profile of some inflammatory markers (IL-6, IL-10 and C-reactive protein CRP) and immunonutritional assessment (through albumin serum levels and lymphocyte count) in a group of elderly patients undergone to major intrabdominal surgery. We related the data obtained to the onset of postoperative complications.

Materials and methods: We evaluated 55 patients, 25 males and 30 females, aged ≥70 (median 75, range 70–89). The only preoperative criterion for inclusion was non urgent major abdominal surgery, the exclusion criteria were: urgent abdominal surgery, chronic therapy with antiinflammatory drugs, therapy with steroid and/or immunosuppressors drugs during 30 days before admission. For each patient we collected three serum samples before the admission. For each patient we considered the length of stay in hospital, any transfusion and any postoperative hemorrhage. No significant differences were found neither in the distribution of the grade of the disease, nor in the spectrum of symptoms (P >> 0.05). Because of the comorbidity in the elderly, the stratification of the ASA risk was different (P < 0.0001). The procedure was performed in day surgery, with an average length of stay of 1 day, in the 75% of the patients of the first group and in the 92% of the second group; the analysis of the surgical performance of this technique, regarding the timing and the use of haemostatic stitches, showed no significant differences associated with elastomeric pump of NSAIDs during the first 24 hours. The two groups were compared in order to verify their homogeneity: no significant differences were found neither in the distribution of the grade of the disease, nor in the spectrum of symptoms (P >> 0.05). Because of the comorbidity in the elderly, the stratification of the ASA risk was different (P < 0.0001).

Results: We observed 12 complications, including one death, corresponding to 21.8% of all evaluated patients (Table 1). All subjects at t1 showed an elevation of IL-6 levels, more consistent in the complicated ones (137.69 ± 91.13 pg/ml vs 108.86 ± 52.62 pg/ml). IL-10 presented the same trend of IL-6, moreover it showed lower basic levels (t0) in complicated patients (19.02 ± 16.73 pg/ml vs 9.31 ± 11.17). The CRP values didn’t differ at any time between the two groups. The lymphocyte count showed a higher basic level (t0) in complicated patients, but a deeper decrement at t1 in the same group. Finally, albumin serum levels were the same at t0 for all patients and they decreased much more than in the complicated ones.

Conclusion: In the group of elderly patients observed, as in general population according to published data, IL-6 and IL-10 may be referred as prognostic markers regard to postoperative complication. It would be moreover useful to identify a cut-off value to select the subjects with a higher postoperative risk. About this topic, CRP trend and lymphocyte count have no role because of lack of sensitivity.

A93
Stapled haemorrhoidopexy (PPH, longo technique) in the elderly
Saverio Spire1, Federico Tona1, Aldo De Rossi1, Andrea Bruttocao1, Bruno Martella1, Carmelo Miletto1, Franco Mazzalai1, Chiara Sirianii2 and Oreste Terranova1
1Dipartimento di Scienze Chirurgiche e Gastroenterologiche Sezione di Clinica Chirurgica Geriatrica – Università di Padova, Italy
2Senior House Officer, Medicine and A&E Directorate, Leicester Royal Infirmary, UK

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Aim: Compare two groups of patients, ≥70 years old and <70 years old, diagnosed with III–IV grade haemorrhoids that underwent stapled haemorrhoidopexy.

Materials and methods: Between May 2001 and September 2008, 273 patients underwent stapled haemorrhoidopexy (PPH Ethicon-EndoSurgery®). The database has been ordered in two groups: the first composed of 29 patients (10.6%) aged ≥70, while the second composed of 244 patients aged <70. The preferred type of anaesthesia was spinal with sedation (90.8%), associated with elastomeric pump of NSAIDs during the first 24 hours. The two groups were compared in order to verify their homogeneity: no significant differences were found neither in the distribution of the grade of the disease, nor in the spectrum of symptoms (P >> 0.05). Because of the comorbidity in the elderly, the stratification of the ASA risk was different (P < 0.0001).

Results: The procedure was performed in day surgery, with an average length of stay of 1 day, in the 75% of the patients of the first group and in the 92% of the second group; the analysis of the surgical performance of this technique, regarding the timing and the use of haemostatic stitches, showed no significant differences between the two groups (P >> 0.05). Early haemorrhagic postoperative complications were 6/273, all of them occurred in the second group and 5/6 (83.3%) required surgical review. Late haemorrhagic complications were 9/273, of which 1 occurred in the first group; the management of the late haemorrhages required surgical review in the 44.5%, and blood transfusion in the 30%. During the first post-operative week occurred several
cases of significant anal pain, tenesmus, faecal urgency and two cases of haemorrhoidal thrombosis. During the follow-up, lasted on average for 3.6 years, we observed 3 relapses (10.3%) among the first group and 21 relapses (8.6%) among the second. 18 patients of the first group (62%) and 124 of the second (50.8%) remained totally disease-free.

Conclusion: Haemorrhoidal disease, although tending to relapse among susceptible patients, can be effectively treated with stapled haemorrhoidopexy (PPH). Thanks to a several years’ follow-up, our experience shows an assessment of the long-term results of this technique, focusing particularly on the comparison between the results in the elderly and in younger patients. Longo technique is usually well tolerated by all the patients, even though not totally pain-free in the early post-operative follow-up (first week). This procedure can be performed safely in the elderly as well as in the younger patients with equivalent results.

PACE administration (Table 1) allows personalized oncological management but it’s time-consuming (30 mins/pt). Newly developed screening tools might be as effective, but were never tested in a surgical scenario.

Groningen Frailty Index (GFI), Vulnerable Elders Survey (VES-13) and the “up and go test” (Table 1) are quick tools, capable of identifying frail individuals. PREOP is an international prospective investigation aiming to analyzing the predictive value of these new tools which are due to be compared against PACE.

Materials and methods: A prospective series of patients aged ≥70 years, undergoing elective cancer surgery will be recruited. PACE, GFI, VES-13 and “up and go” will be pre-operatively administered. Pre-, peri- and post-operative data will be collected and entered into the database. 326 patients will need to be recruited within 2 years to allow analysis.

A94
Preoperative risk estimation for onco-geriatric patients (PREOP) – preoperative assessment of elderly surgical patients
Eriberto Farinella, Francesco La Mura, Roberto Cirocchi, Pamela Delmonaco, Carla Migliaccio, Giannermo Giustozzi, Francesco Sciammone and Riccardo A Audisio
1Department of General and Emergency Surgery, S. Maria Hospital, Terni-University of Perugia, Italy
2St Helens Hospital, University of Liverpool, Liverpool, UK


Background: Most cancer patients undergoing surgery are aged ≥70, with 1/3 considered frail and at poor surgical risk. Preoperative assessment of oncogeriatric patients may expand survival and improve quality of life. Preoperative Assessment of Cancer in the Elderly (PACE) was useful in identifying those individuals with a poor surgical risk. Instrumental Activities of Daily Living (IADL), Brief Fatigue Inventory (BFI) and Performance Status (PS) correlate with operative 30-day mortality, while Activities of Daily Living (ADL), IADL and PS associate with a lengthy post-operative hospital stay.

<table>
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<tr>
<th>Tool</th>
<th>Abbreviation</th>
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<tr>
<td>PREOP</td>
<td>Groningen Frailty Index (GFI)</td>
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<tr>
<td></td>
<td>Vulnerable Elders Survey (VES-13)</td>
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<td>“up and go test”</td>
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<td>PACE</td>
<td>Mini-Mental State (MMS)</td>
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<td></td>
<td>Modified index of comorbidities (Satariano)</td>
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<td></td>
<td>Activities of Daily Living (ADL)</td>
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<td></td>
<td>Instrumental Activities of Daily Living (IADL)</td>
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<td></td>
<td>Brief Fatigue Inventory (BFI)</td>
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<td>Eastern Cooperative Oncology Group performance status</td>
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<td>American Society of Anaesthesiologists (ASA)</td>
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<td></td>
<td>Physiological and Operative Severity Score for enumeration of Mortality and Morbidity (POSSUM)</td>
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<td>Portsmouth POSSUM modification</td>
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Table 1 (abstract A94) Tools used in PREOP study vs. PACE study
A96
The complications of laparoscopic adrenalectomy in older patients
Giuseppe Giraudo, Federico Festa, Diego Visconti and Mario Morino
Chirurgia Generale 2–Università di Torino – Italy

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Background: Laparoscopic minimally invasive access has changed treatment of the adrenal lesions, becoming the gold standard for the treatment of secreting and non-secreting benign tumors, of rare lesions like cysts or myelolipomas, but remaining still controversial for malignant lesions. In relation to international literature data concerning complications linked to this approach, in particular with regards to over seventy-year-old patients, we have analysed our experience comparing the overall series with that of older patients.

Materials and methods: From March 1995 to October 2008, performing transabdominal laparoscopic adrenalectomy with flank-approach, we have treated 277 patients (162 women and 115 men) under seventy years old (A group), mean 47.2 (range 3–69) years; 127 right, 139 left and 11 bilateral lesions. Benign lesions have been 50 incidentalomas (with diameter greater than 4 cm), 88 Conns, 4 Cushing’s, 50 pheochromocitomas, 2 cysts, 3 angiomyolipomas, 3 adenogenital syndromes, 1 echinococcosis, 1 ganglioneuroma, 1 oncoticarcin adenoma, 1 solitary fibrous adrenal tumor, 1 Castleman’s disease, 1 pigmented paraganglioma and 1 Kinsbourne syndrome. Malignant lesions have been 7 cortical carcinomas (all of these with pre-operative diagnosis of incidentalomas) and 7 metastases. In the same period we have treated 32 patients over seventy years old (B group), whereof 15 women and 17 men, 13 right, 18 left, 1 bilateral lesions, mean age 73.12 (range 70–81) years, in which we have found 6 incidentalomas, 6 Conns, 4 Cushing’s, 8 pheochromocitomas, 2 cysts, 1 angiomyolipoma, 1 cortical carcinoma and 4 metastasis.

Results: We did not find any statistically significant difference between two groups concerning operative time (group A mean 80.49 [range 20–270] minutes vs group B mean 92.03 [range 45–240] minutes), postoperative stay (group A mean 3.68 [range 2–13] days vs group B mean 3.48 [range 2–9] days), morbidity (group A 3.97% [11/277] vs group B 6.25% [2/32]: 1 post operative myocardial infarction in a seventy years old man, 1 pancreatic pseudo-cyst in a seventy-three year old man), mortality (group A 0.36% [1/277] vs group B 0%), conversion rate (group A 1.08% [3/277] vs group B 3.12% [1/32]). We have rather found statistically significant difference concerning adrenal lesion’s size: group A mean 3.9 (range 0.5–18) cm vs group B mean 4.78 (range 1–11) cm, p = 0.04. All the specimens were homogeneous in regard to anatomopathological characteristics.

Conclusion: In our experience we have confirmed the safety and feasibility of laparoscopic adrenalectomy even in old age population, with complication rate and death rate comparable to literature data (0.7–17%; 0–0.4%).
approximately for 3.65 days. The median time until the first bowel movement was 3.18 days after surgery. No patient had local and general complications. Four patients had post-operative nausea and vomiting and 2 of them required the introduction of the nasogastric tube. The mean time of the discharge from hospital was 7.25 days after surgery.

**Conclusion:** The fast track rehabilitation programme on elderly patient is not only feasible but may also lower the number of general and local complications and the duration of the hospital stay reducing costs. Duration of paralytic ileus can be reduced to 48–72 h compared with about 96–120 h with traditional care as reported in the major randomized trials and overall hospital stay is reduced from about 8–12 days to 2–5 days.

**A98**

**Developing guidelines in geriatric surgery: role of the grade system**

Corrado Rispoli, Nicola Rocco, Loredana Iannone, Rita Compagna, Luigi De Magistris, Antonio Braun and Bruno Amato

*Dipartimento di Chirurgia Generale, Geriatrica ed Endoscopia Diagnostica ed Operativa, University of Naples-Federico II, Italy*

*BMC Geriatrics 2009, 9(Suppl 1):A98*

In making healthcare management decisions, clinicians must weigh up the benefits and the harms of alternative strategies. Guidelines are useful tools for administrators, policy makers, managers, clinical leaders and care givers to achieve this aim. Guidelines recommendations may be produced in three different ways: small panels of experts, consensus conferences and on the basis of evidence. Expert clinicians and organisations offering recommendations to the clinical community have often erred as a result of not taking sufficient account of evidence. Moreover the so-called “evidence-based guidelines” are often inconsistent in how they rate the quality of evidence and the strength of recommendation. Systems used to assess quality of evidence in guidelines are useful tools for administrators, policy makers, managers, clinical leaders and care givers to achieve this aim. Guidelines recommendations may be produced in three different ways: small panels of experts, consensus conferences and on the basis of evidence. Expert clinicians and organisations offering recommendations to the clinical community have often erred as a result of not taking sufficient account of evidence. Moreover the so-called “evidence-based guidelines” are often inconsistent in how they rate the quality of evidence and the strength of recommendation. Systems used to assess quality of evidence in guidelines were only scales that reported the study design the evidence was provided from as a letter or a number (i.e. C1, IIb, etc). This kind of evaluation gives great emphasis on RCTs and metaanalysis as an “a priori” source of good evidence without a systematic evaluation of study quality. This drives to a lesser impact of observational studies, CCTs and case series of rare adverse events in guidelines. Geriatric patients are often excluded or underrepresented in trials mainly because comorbidity conditions and toxic effects of treatment are the greatest barriers to recruitment of older patients. Other studies have shown that physician refusal to enrol patients onto trials is among the top reasons for low protocol participation. Thus evidences for geriatric guidelines are, according to such a rating scheme, of low level. Since 2006 the BMJ requested in its instruction to authors, that authors should preferably use the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system for grading evidence when submitting a clinical guidelines article. The GRADE system separates decisions regarding the quality of evidence from strength of recommendations and allows upgrading or down grading of level of evidence according to quality of evidence rather than to study design.

In order to obtain reliable and evidence-based guidelines in geriatric surgery, the GRADE system for grading evidence should be used as consolidated standard.

**A99**

**Milligan Morgan haemorrhoidectomy with Ligasure™ in geriatric patients**

I Selvaggio, F Caddeo, MG Muzi, F Andreoli, D Amabile and G Millico

*From The Department of Surgery, University Hospital Tor Vergata, Rome, Italy*

*BMC Geriatrics 2009, 9(Suppl 1):A99*

**Background:** Haemorrhoidectomy is frequently associated with significant postoperative pain and prolonged hospital stay; different techniques and devices have been developed to overcome these problems, including modifications of the technique (excision without ligation) and introduction of new surgical instruments (Ligasure™, Harmonic Scalpel™). We evaluated the surgical outcomes of Milligan Morgan haemorrhoidectomy with LigaSure™ in a Day-Care setting in two groups of patients: subjects <60 years (group A) and patients older than 60 years (group B).

**Materials and methods:** Between January 2004 and February 2008, 413 consecutive patients (group A: 261 patients; group B: 152 patients) with grade 3 or 4 symptomatic haemorrhoids underwent a LigaSure™ haemorrhoidectomy according to Milligan Morgan technique. The operative time, postoperative pain score, duration of hospital stay, postoperative complications, wound healing time, convalescence and recurrence were documented.

**Results:** Mean operating time was 26.32 minutes (range 10–50 minutes), the median postoperative pain VAS score was 2 (range 0–4) in group A and 1 (range 0–3) in group B. All patients of group A were ‑ discharged within 7 hours while 5 patients of group B (3.2%) had one day surgery. The median convalescence period was 7 days (range 5–15) for group A and 9 days for group B (range 5–20) and complete wound healing time was recorded after the median of 18 days in all patients.

Three cases of immediate postoperative bleeding (1 of group A and 2 of group B patients), which were surgically treated, were observed. During a median follow up of 39 months, 3 recurrences were detected (2 of group A and 1 of group B patients) and 2 patients (1 of group A and 1 of group B patients) developed late anal stenosis, successfully managed using anal dilators. None of the patients developed faecal continence impairment at the end of the observational period.

**Conclusion:** Ligasure™ haemorrhoidectomy can be considered a safe, simple, reproducible and fast procedure also for geriatric patients, with low rate of early and late postoperative complications, reduction of postoperative pain and hospitalisation, fast wound healing time and quick return to daily activities.
Carcinoid and hypocoagulation state in geriatric patients: a rare case
Carla Migliacci, Pamela Delmonaco, Eriberto Farinella, Francesco La Mura, Alessandro Spizzirri, Barbara Rossetti, Valerio Mecarelli, Roberto Cirocchi, Giammario Giustozzi and Francesco Sciannameo
Department of General and Emergency Surgery, S. Maria Hospital, Terni-University of Perugia, Italy
BMC Geriatrics 2009, 9(Suppl 1):A100

Background: Recently, in literature, it is possible to find cases about the ulcer risk of serious haemorrhages associated to the selective serotonin reuptake inhibitors usage (SSRI) in geriatric patients. Neuroendocrine tumours are quite rare (one person out of 100,000), the most common localization is the small intestine and they represent 50% of the malignant tumours of small intestine.

Materials and methods: We observed a 79-year-old patient suffering from high blood pressure and Alzheimer, with an history of periodic abdominal pain from almost 2 months and 10 Kg weight loss in the last month. In suspicious of a carcinoid, the patient underwent scintigraphy with In-111 showing the presence of two abnormal focal buildup of the trace compatible with the presence of a productive tissue with somatostatin receptors. Lab exams were normal, except for the serum Chromogranin A (42.0 U/l), the 5 OH indole acetic acid (11.0 mg/24 h) and the urinary Vanillyl-Mandelic acid (7.0 mg/24 h). Therefore the patient underwent surgery. The patient had a regular course until the third post-operative day when an acute anemia appeared (GR 2460000, Hb 7.0 g/dl, HCT 22.3%). Therefore we performed an emergency intervention that showed the presence of diffuse bleeding from the parietal and visceral peritoneum with haemorragic filling of the transverse mesocolon.

Results: The association between carcinoid and hypocoagulative state is rare and their connection is not yet clear. Hemocoagulative alterations can be often found in a tumor. The aberrant production of procoagulant and hematopoietic growth factors, fibrinolytic and proteolytic factors is responsible for several paraneoplastic syndromes. The increased risk of serious haemorrhages in association with SSRI is a consequence of the inhibition of the platelet aggregation caused by SSRI through serotonin depletion in platelets. In 1999, this article’s authors had already demonstrated that SSRI can increase the risk of bleeding of the upper gastrointestinal tract. This risk is increased especially with concomitant therapy with aspirin or nonsteroidal anti-inflammatory agents or by stress factors (major surgery, sepsis, shock, etc) in geriatric patients.

Discussion: The absence of a precise location of postoperative bleeding can be explained by the hypocoagulative state of the patient due to different factors: coagulopathy by paraneoplastic syndrome, assumption of selective serotonin reuptake inhibitors, geriatric patient and operative stress.

pT2 report after transanal endoscopic microsurgery excision in elderly patient
T1 staged: a case report
Lorenzo Cattorini, Marco Coccuta, Alessandro Spizzirri, Vincenzo Napolitano, Barbara Rossetti, Pamela Delmonaco, Carla Migliacci, Roberto Cirocchi, Giammario Giustozzi and Francesco Sciannameo
Department of General and Emergency Surgery, S. Maria Hospital, Terni-University of Perugia, Italy
BMC Geriatrics 2009, 9(Suppl 1):A101

Background: TEM is a surgical procedure characterized by full thickness excision with curative purpose. After pathologist staging, though the high accuracy of diagnostic studies, as we will describe, an understaging may be reported.

Materials and methods: We present a case of rectorrhagia in an 83-years old patient. On rectal exploration a little hard lesion was found. A colonoscopy with biopsy was performed to search for synchronous lesions. A virtual colonoscopy and CT total body were performed to stage the patient and integrate the endoscopy and they both were negative. The endoscopy confirmed the lesion (adenocarcinoma G2) and described it as sessile, with a diameter of 22 mm, in the right wall of the middle rectum. A transanal ultrasonography was performed and staged the lesion as T1, N0. The hematological investigations showed lymphocytosis in relation with an anamnestic LLC, tumor markers (CEA, Ca 19.9) were in normal range. Considering stage (T1, N0, M0), age and clinical status, the decision of performing TEM was taken. The cancer was completely removed and sent for histological examination.

Results: The postoperative period was regular. The patient was able to mobilize at first postoperative day, evacuate at second and he was discharged at fourth. A minimal episode of disorientation was noticed in first postoperative day. The rectal suture didn’t show early or late complications. The definitive histological was an adenocarcinoma pT2 G2. The patient, informed of the histological result, refused to undergo radical surgery. So we addressed him to radiotherapeutic evaluation. He performed an adjuvant radiotherapy and underwent ultrasonography, CT and hematological follow-up, all negative at 6 months.

Conclusion: In order to obtain a curative TEM resection, the resection limits must be cancer free and the excision must be full thickness. TEM is well tolerated by the elderly patient with co morbidity versus the classical abdominal resections. Oncologic results are comparable to the classical resections for T1 either for recurrences or 5 years survival. Moreover TEM allows evaluation of the stage of the lesion and, if under stage, send to radical surgery or alternative therapeutic protocol as we presented with interesting results; but these data should be further defined.